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Theorising Nuclear Weapons Proliferation: Understanding the Nuclear
Policies of India, South Africa, North Korea, and Ukraine

by

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ABSTRACT

This thesis examines the causes of nuclear proliferation in India, South Africa, North Korea and Ukraine, and evaluates the extent to which neorealist theories can enhance our understanding of this phenomenon. The thesis makes four principal points. First, it asserts that the four states under consideration have pursued nuclear capabilities for their political and/or economic leverage, rather than their military utility. Recent versions of neorealism can account for this through the disaggregation of the concept of power and an expanded definition of interests. Second, it shows that nuclear behaviour has been strongly influenced by the internal characteristics of the state. Parsimonious versions of neorealism abstract from the unit level and, in doing so, neglect key domestic proliferation pressures. In contrast, the theory of structural realism (developed by Barry Buzan, Charles Jones and Richard Little in *The Logic of Anarchy*) derives explanations from both internal and external sources, using the concepts of relational and attributive power and the notion of interaction capacity. These theoretical constructs link structure and unit, creating an operational multilevel theory. Third, the thesis argues for the consideration of non-material proliferation pressures and constraints. The nuclear weapons policies of India, South Africa, North Korea and Ukraine have been strongly influenced by the ideas, beliefs and values of individuals and organisations that shape state identity and interests. Structural realism's explanatory potential is limited by its failure to account for the role of sub-state actors or the power of ideas. The thesis concludes that attempts to create a metatheory that combines material and ideational explanations of nuclear proliferation will be hampered by epistemological problems. It would be more productive to develop a theoretically sound ideational theory to complement, rather than replace, complex forms of neorealism.

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List of Abbreviations and Acronyms

ACDA	Arms Control and Disarmament Agency
ACDIS	Arms Control, Disarmament and International Security
AEB	Atomic Energy Board
AEC	Atomic Energy Commission
AEC	Atomic Energy Corporation
AHC	Australian High Commission
ANC	African National Congress
Arm Scor	Armaments Development and Production Corporation
ASEAN	Association of South-East Asian Nations
ASLV	Augmented Satellite Launch Vehicle
AZAPO	Anzanian Peoples' Organisation
BJP	Bharatiya Janata Party
BSEC	Black Sea Economic Co-operation
CCFMSA	Commonwealth Committee of Foreign Ministers on Southern Africa
CDR	Council for Defence Research
CEE	Central and Eastern Europe
CIA	Central Intelligence Agency
CIS	Commonwealth of Independent States
CNN	Cable News Network
CNS	Center for Nonproliferation Studies
CNSS	Council for National Security Studies
CPSU	Communist Party of the Soviet Union
CRS	Congressional Research Service
CSCE	Conference on Security and Co-operation in Europe
CSIA	Centre for Security and International Affairs
CTBT	Comprehensive Test-Ban Treaty
CWIHP	Cold War International History Project
DAE	Department of Atomic Energy
DEA	Department of External Affairs
DIA	Defence Intelligence Agency
DOD	Department of Defense
DOS	Department of State
DPRK	Democratic People's Republic of Korea
DRDO	Defence Research and Development Organisation
EIU	Economist Intelligence Unit
EU	European Union
FBIS	Foreign Broadcast Information Service
FEER	Far East Economic Review
FCO	Foreign and Commonwealth Office
FRG	Federal Republic of Germany
FSU	Former Soviet Union
G7	Group of Seven
GDP	Gross Domestic Product

GNP	Gross National Product
HEU	Highly Enriched Uranium
IAEA	International Atomic Energy Agency
ICBM	Inter-Continental Ballistic Missile
ICJ	International Court of Justice
IDSA	Institute for Defence and Strategic Analysis
IGCC	Institute on Global Conflict and Co-operation
IISS	International Institute for Strategic Studies
IMF	International Monetary Fund
INSS	Institute for National Strategic Studies
IPD	Institute of Peace and Disarmament
IRBM	Intermediate Range Ballistic Missile
ISIS	International Security Information Service
ISRO	Indian Space Research Organisation
JNCC	Joint Nuclear Control Commission
JPRS	Joint Publications Research Service
KPA	Korean Peoples Army
KWP	Korean Workers Party
LEU	Low Enriched Uranium
MARG	Marketing and Research Group
MCIS	Mountbatten Centre for International Studies
MIIS	Monterey Institute for International Studies
MIT	Massachusetts Institute of Technology
MoD	Ministry of Defence
MPLA	Popular Movement for the Liberation of Angola
NAM	Non-Aligned Movement
NATO	North Atlantic Treaty Organisation
NIE	National Intelligence Estimate
NNWS	Non-Nuclear Weapons State
NPT	Nuclear Non-Proliferation Treaty
NSA	National Security Agency
NSA	National Security Archive
NSC	National Security Council
NWFZ	Nuclear Weapon Free Zone
NWS	Nuclear Weapons State
PIPES	Programme on International Politics, Economics and Security
PNE	Peaceful Nuclear Explosion
PPNN	Programme for Promoting Nuclear Non-Proliferation
PRC	People's Republic of China
R&D	Research and Development
RMA	Revolution in Military Affairs
ROK	Republic of Korea
RSA	Republic of South Africa
SADF	South African Defence Force
SAIIA	South African Institute for International Affairs
SIPRI	Stockholm International Peace Research Institute
SLV	Space Launch Vehicle

SSC	State Security Council
SWAPO	South West African Peoples' Organisation
SWB	Summary of World Broadcasts
U.S.	United States of America
UDF	United Democratic Front
UEC	Uranium Enrichment Corporation
UK	United Kingdom of Great Britain and Northern Ireland
UN	United Nations
UNIDIR	United Nations Institute for Disarmament Research
UNITA	Union for the Total Independence of Angola
USSR	Union of Soviet Socialist Republics

Chapter One: Introduction

I cannot believe that we are about to start the twenty-first century by having the Indian subcontinent repeat the worst mistakes of the twentieth century when we know it is not necessary to peace, to security, to prosperity, to national greatness or national fulfilment.

President Bill Clinton, 29 May 1998.¹

Why do states seek nuclear weapons? During the Cold War, social scientists suggested three principal answers to this question, based primarily on research into nuclear dynamics in the nuclear weapon states (NWS). States were believed to want nuclear weapons: because they seek security; because they seek power; or because the technology to develop such weapons exists.² The technology imperative is no longer believed to be a convincing cause of nuclear proliferation, but the security and power imperatives continue to dominate thinking in the field.³

Neorealism provides the theoretical framework most often used to explain why states seek security and power through the development or acquisition of nuclear weapons. It derives predictions and explanations from the assumption that states exist in an anarchic international environment where they must compete with each other in order to survive. In such an

¹ Quoted in Therese Delpech, 'Nuclear Weapons: Their Present and Future. A Debate.' Paper presented at the IISS 40th Annual Conference, Oxford, 3-6 September 1998.

² These were identified as the principal reasons why proliferation decisions were taken by the NWS in the following country studies: Leslie R. Groves, *Now It Can Be Told: The Story of the Manhattan Project* (London: Andre Deutsch, 1963); Lansing Lamont, *The Day of Trinity* (New York: Atheneum, 1965); David Holloway, 'Entering the Nuclear Arms Race: The Soviet Decision to Build the Atomic Bomb, 1939-45,' *Social Studies of Science* 11 (1981); Andrew J. Pierre, *Nuclear Politics: The British Experience with an Independent Strategic Force, 1939-1970* (London: Oxford University Press, 1972); Richard N. Rosecrance, 'British Incentives to Become a Nuclear Power,' in Richard N. Rosecrance (ed.), *The Dispersion of Nuclear Weapons: Strategy and Politics* (New York: Columbia University Press, 1964); George A. Kelly, 'The Political Background of the French A-Bomb,' *Orbis* 4 (Fall) 1960; Wolf Mendl, *Deterrence and Persuasion: French Nuclear Armament in the Context of National Policy, 1945-1969* (London: Faber and Faber, 1970); Wilfred L. Kohl, *French Nuclear Diplomacy* (Princeton, NJ: Princeton University Press, 1971); Morton H. Halperin, *China and the Bomb* (New York: Praeger, 1965); Alice Langley Hsieh, 'Communist China and Nuclear Force,' in Rosecrance, *op. cit.*; Jonathan D. Pollack, 'China as a Nuclear Power,' in William H. Overholt (ed.), *Asia's Nuclear Future* (Boulder, CO: Westview Press, 1977).

The most unadorned study that identifies technology as the principal driver of nuclear proliferation is Ralph E. Lapp's, *Arms Beyond Doubt: The Tyranny of Weapons Technology* (New York: Cowles, 1970). A strong argument in favour of prestige as the principal driver is provided by Ted Greenwood, Harold A. Feiveson and Theodore B. Taylor, in *Nuclear Proliferation: Motivations, Capabilities, and Strategies for Control* (New York: McGraw-Hill, 1977). An explicit example of the security thesis is presented in John M. Deutsch, 'The New Nuclear Threat,' *Foreign Affairs* 71 (Fall) 1992.

³ The technological imperative was discredited when the pessimistic predictions of widespread nuclear proliferation amongst all technologically capable states, were not supported by actual developments. Many technologically capable states decided not to develop nuclear weapons, whilst less advanced states were able to develop a nuclear capability or acquire nuclear technology and materials from overseas suppliers. The problems associated with technological determinist explanations for nuclear proliferation are discussed in Peter Lavoy, 'Nuclear Myths and the Causes of Nuclear Proliferation,' *Security Studies* 2 (Spring/Summer) 1993; and Bradley A. Thayer, 'The Causes of Nuclear Proliferation and the Utility of the Nuclear Nonproliferation Regime,' *Security Studies* 4 (Spring) 1995.

environment, arms races are the inevitable consequence of insecurity and the system-mandated behaviour - self-help.

This thesis poses the following core question: can neorealism provide a convincing theory of nuclear proliferation?⁴ In answering this question, both parsimonious and complex versions of the theory are examined.⁵ The aim is to identify the strengths and weaknesses of these approaches and, in the conclusion, to suggest complementary theories that could be used to enrich neorealist explanations.

The subject of nuclear proliferation has received a great deal of attention since the end of the Cold War. As the Soviet Union disintegrated, scholars and policymakers tried to predict the effect that this would have on proliferation dynamics. The world was entering a new phase of the nuclear era, but would it be characterised by peace and stability or conflict? Would it reinforce or relieve proliferation pressures? Past experience could not be drawn upon to answer these questions. The development of nuclear weapons had coincided with the beginning of the Cold War, and over the next 45 years nuclear weapons programmes had emerged in a world dominated by the United States and the Soviet Union. There was no way of knowing what the post-Cold War nuclear world would be like.

During the Cold War, a number of scholars used the most parsimonious form of neorealism to explain the absence of world war and the slow rate of nuclear proliferation.⁶ They argued that, under bipolarity, stability

⁴ Nuclear proliferation can occur vertically (when a nuclear-armed state expands its nuclear arsenal) and horizontally (when a non-nuclear state develops a nuclear capability). This thesis addresses the latter phenomenon, which Kenneth Waltz refers to as the 'spread' of nuclear weapons. Kenneth N. Waltz, 'Nuclear Myths and Political Realities,' *American Political Science Review* 84 (September) 1990.

⁵ The thesis focuses on three versions of neorealism: the form of balance of power theory originally expounded by classical realists such as Hans Morgenthau, and more recently by neorealists such as John Mearsheimer; the more parsimonious form of the theory developed by Kenneth Waltz in *Theory of International Politics*, and the more complex form of neorealism developed by Barry Buzan, Charles Jones and Richard Little in *The Logic of Anarchy*. Hans Morgenthau, *Politics Among Nations: The Struggle for Power and Peace* (New York: Knopf, 1978); John J. Mearsheimer, 'Back to the Future: Instability in Europe After the Cold War,' *International Security* 15 (Summer) 1990; Kenneth N. Waltz, *Theory of International Politics* (Reading: Addison-Wesley, 1979); Barry Buzan, Charles Jones and Richard Little, *The Logic of Anarchy: Neorealism to Structural Realism* (New York: Columbia University Press, 1993).

⁶ Kenneth N. Waltz, 'The Stability of a Bipolar World,' *Daedalus* (Summer) 1964; Kenneth N. Waltz, 'International Structure, National Force, and the Balance of World Power,' *Journal of International Affairs* (Summer) 1967; Ciro Elliott Zoppo, 'Nuclear Technology, Multipolarity and International Stability,' *World Politics* (July) 1966; John H. Herz, *International Politics in the Atomic Age* (New York: Columbia University Press, 1962); Morton A. Kaplan, *System and Process in International Politics* (New York: John Wiley and Sons, 1962); Morton A. Kaplan, 'Balance of Power, Bipolarity and Other Models of International Systems,' *American Political Science Review* (September) 1957; K.J. Holsti, *International Politics: A Framework for Analysis* (Englewood Cliffs, NJ: Prentice-Hall, 1972); Raymond Aron, *Peace and War: A Theory of International Relations* (New York: Praeger, 1966); Zbigniew Brzezinski, 'How the Cold War Was Played,' *Foreign Affairs* (October) 1972; Adam B. Ulam, *The Rivals: America and Russia Since World War*

was created through a system of superpower security guarantees and a high level of predictability.⁷ Under such a system structure, war was unlikely between the major bipolar actors and proliferation pressures were reduced due to lower levels of insecurity. Others used rational deterrence theory to explain the absence of major war, arguing that the prospect of nuclear confrontation had a stabilising effect on the international system, as states were deterred from attacking nuclear-armed states.⁸ They argued that nuclear weapons would spread slowly, as states developed the technological and economic capabilities to develop them.

At the end of the Cold War, the same theories were used to predict future cases of nuclear proliferation and their consequences. Scholars argued that the end of bipolarity would have dramatic consequences for nuclear proliferation, as states, which had previously derived security from superpower alliances, were forced to face an uncertain future without powerful allies.⁹ They predicted that, in response to these pressures, states would attempt to meet their own security needs, leading to the proliferation of nuclear weapons. The consequences of this proliferation was the subject of intense debate amongst international relations theorists. Some used rational deterrence theory to argue that the spread of nuclear weapons would result in fewer conflicts, whilst others used decisionmaking approaches to argue that it would lead to nuclear war and/or nuclear accidents.¹⁰

II (New York: Viking Press, 1971); Steven Spiegel, 'Bimodality and the International Order: The Paradox of Parity,' *Public Policy* (Winter) 1970; John Lewis Gaddis, 'The Long Peace,' *International Security* (Spring) 1986.

⁷ According to neorealists, the structure of the international system is determined by the number of major powers (or poles). Bipolarity refers to a system dominated by two states. This concept is discussed at length in chapter 2.

⁸ Glenn H. Snyder, *Deterrence and Defense* (Princeton, NJ: Princeton University Press, 1961); Bernard Brodie, *War and Politics* (New York: Macmillan, 1973); Shai Feldman, *Israeli Nuclear Deterrence: A Strategy for the 1980s* (New York: Columbia University Press, 1982); Patrick Morgan, *Deterrence: A Conceptual Analysis* (Beverly Hills: Sage, 1977); Kenneth Waltz, 'Toward Nuclear Peace,' in D. Brito and M. Intrilligator (eds.), *Strategies for Managing Nuclear Proliferation* (Lexington, MA: Lexington Books, 1982); Kenneth N. Waltz, *The Spread of Nuclear Weapons: More May Be Better*. Adelphi Paper No. 171 (London: IISS, 1981).

⁹ Mearsheimer (1990); Kenneth N. Waltz, 'The Emerging Structure of International Politics,' *International Security* (Fall) 1993; Kenneth N. Waltz, 'More May Be Better,' in Scott D. Sagan and Kenneth N. Waltz, *The Spread of Nuclear Weapons: A Debate* (New York: W.W. Norton and Company, 1995).

¹⁰ Proliferation optimists include: Waltz (1990); John J. Mearsheimer, 'The Case for a Ukrainian Nuclear Deterrent,' *Foreign Affairs* 72 (Summer) 1993; Stephen Van Evera, 'Primed for Peace: Europe After the Cold War,' *International Security* 15 (Winter) 1990/91; Peter Lavoy, 'Civil-Military Relations, Strategic Conduct, and the Stability of Nuclear Deterrence in South Asia,' in *Civil-Military Relations and Nuclear Weapons* (Stanford Center for International Security and Arms Control, June 1994); Martin van Creveld, *Nuclear Proliferation and the Future of Conflict* (New York: Free Press, 1993); Benjamin Frankel, 'The Brooding Shadow: Systemic Incentives and Nuclear Weapons Proliferation,' *Security Studies* 3 1993; Devin T. Hagerty, *The Consequences of Nuclear Proliferation: Lessons from South Asia* (Cambridge, MA: MIT Press, 1998).

Proliferation pessimists include: Steven Lee, 'What's Wrong with Nuclear Proliferation?' *Security Studies* 5 (Autumn) 1995; T. V. Paul, 'The Paradox of Power: Nuclear Weapons in a Changed World,' *Alternatives* 20 (October-December) 1995; Lewis A. Dunn, *Containing Nuclear Proliferation*. Adelphi Paper No. 263 (London: IISS, 1991);

Nearly a decade has now passed since the end of the Cold War, and it is now possible to provide an evaluation of the different predictions and explanations of nuclear behaviour. Although events during the early 1990s appeared to support neorealist predictions, by the middle of the decade many of the early proliferation concerns had been diffused: the nuclear inheritors of the Soviet Union - Ukraine, Kazakhstan and Belarus - had renounced nuclear weapons; the International Atomic Energy Agency (IAEA) had verified the dismantlement of South Africa's nuclear arsenal; and a nuclear deal had been brokered with North Korea. More recent developments appear to be more compatible with neorealist expectations of behaviour: Iraq's adversarial relationship with the United Nations (UN) inspection team, Iran's ambiguous nuclear activities, the nuclear tests in India and Pakistan; and reports of renewed nuclear ambitions in North Korea. But the question remains: how can these developments be explained? Why have some states renounced nuclear weapons, while others are seeking to expand their nuclear weapons programmes? Can neorealism offer any insight into this phenomenon?

1. Thesis outline

This thesis is organised in three parts. The first part (chapter two) will review the contemporary debate on neorealist theories of nuclear proliferation. It will trace the evolution of neorealism within the discipline of international relations, providing a critical appraisal of different forms of the theory. It will then examine three versions of neorealism, revealing the theoretical expectations of behaviour that are derived from their assumptions. The principal questions that will be addressed are: what are the theoretical assumptions underpinning each approach? What descriptions, explanations, and predictions of nuclear dynamics are offered by the different versions of neorealism? Which appear to offer the most insight into proliferation causes?

Steven E. Miller, 'The Case Against a Ukrainian Nuclear Deterrent,' *Foreign Affairs* 72 (Summer) 1993; Paul Bracken, 'Nuclear Weapons and State Survival in North Korea,' *Survival* 35 (Autumn) 1993; Scott D. Sagan, 'More Will Be Worse,' in Scott D. Sagan and Kenneth N. Waltz, *op. cit.*; Scott D. Sagan, 'The Perils of Proliferation: Organisation Theory, Deterrence Theory and the Spread of Nuclear Weapons,' *International Security* 18 (Spring) 1994.

The second part (chapters three, four, five and six) will consist of four case studies: India, South Africa (also referred to as the Republic of South Africa (RSA)), North Korea (also referred to as the Democratic Peoples Republic of Korea (DPRK)), and Ukraine. The aim of this part of the thesis is to test the explanatory power of neorealist explanations of nuclear proliferation dynamics. Each case study is divided into two sections: empirical analysis and theoretical analysis. In each case, the first section will focus on three areas. First, what international and domestic conditions coincided with significant nuclear developments? Second, what role have nuclear weapons played in each state and how have they been viewed by the decisionmaking elite? Third, what factors have influenced nuclear rollback decisions? In each case, the second section of the case study will be devoted to theory-testing, identifying the areas where theoretical expectations of behaviour are supported by the empirical evidence and those that are not.

The third part (chapter seven) will draw conclusions about the causes of nuclear proliferation, based on the empirical analysis contained in each of the case studies. It will then provide a final evaluation of structural realism as a theory of nuclear proliferation. Does this version of neorealism account for the additional causes that have been identified in part two of the thesis? In what ways is it stronger than other versions of neorealism? What are the weaknesses of this theory? Is there a way of overcoming these weaknesses by adapting structural realism, or is a complementary theory required?

2. Assumptions and definitions

The assumptions that underpin this thesis, and its limitations, require some discussion at the outset. In particular, the dependent variable in the analysis - that is, nuclear proliferation, the phenomenon which is to be explained - requires definition. First, what is nuclear proliferation? Some scholars have based their research on the assumption that nuclear proliferation occurs when a decision is taken to begin a nuclear weapons programme. Others have argued that nuclear proliferation occurs when a state demonstrates its nuclear

capability to the world by testing the reliability and characteristics of its nuclear weapons. This thesis is based on the assumption that nuclear proliferation can not be pinned down to one specific decision or a moment in time. Nuclear proliferation is defined as a process, rather than an event. As such, a variety of decisions - from the decision to begin research in the possibilities of developing a nuclear weapons programme, to the decision to renounce nuclear weapons - are considered to be part of the process and therefore an important part of the analysis.¹¹

Second, when does a country become a nuclear weapons state? Under the terms of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), a state is considered to have acquired nuclear weapons only if it has unambiguously convinced the world by detonating a nuclear device. However, this definition has been shown to be seriously flawed. Historically, every initial test of a nuclear device has succeeded, a point that gives confidence to states with a proven, if untested, weapons design. Moreover, laboratory simulation techniques and computer modelling have reduced the need for overt weapons tests. A country may therefore stop short of testing, but may still be in the position to rapidly construct a number of deliverable bombs. This thesis is therefore based on the assumption that all states, whether they have tested or not, should be classified as nuclear weapon states if they possess a nuclear weapons arsenal, or if they have implemented a nuclear weapons programme and are believed to have

¹¹ Few attempts have been made to develop the proliferation concept. However, two studies on the subject deserve some discussion. The first, by Lewis A. Dunn and William H. Overholt, presents nuclear proliferation as a ladder of capabilities, rising from basic nuclear research to: the detonation of a nuclear device; the acquisition of delivery systems; the development of command, control and communication procedures; and the articulation of strategic doctrine. This study made an important contribution to the literature, as the first piece of scholarship to conceive of proliferation as an evolutionary process. The second, by Stephen M. Meyer, presents nuclear proliferation as a three-stage decisionmaking process: stage 1) an explicit government decision to develop a latent nuclear capability; stage 2) a decision to transform a latent capacity into an operational capacity; stage 3) a decision to begin an operational nuclear weapons programme. The second stage is referred to as the 'proliferation decision,' and constitutes the pivotal point in the proliferation process, occurring when strong motivational factors coincide with a latent capacity to build nuclear weapons, leading the state to believe that the acquisition of nuclear weapons will allow it to accomplish foreign, defence, and domestic policy objectives. His model also allows for the reversal of proliferation decisions, as the balance between pressures and constraints change and decisions are overturned. This represented an important advance on existing conceptualisations of nuclear proliferation, as it linked the capabilities ladder to the actual decisionmakers and their motivations for pursuing or renouncing nuclear weapons. As Meyer explained at the outset: 'nuclear weapons do not generate spontaneously from stockpiles of fissile material...the decision to 'go nuclear' is a crucial step in the nuclear proliferation process.' Lewis A. Dunn and William H. Overholt, 'The Next Phase in Nuclear Proliferation Research,' *Orbis* 20 (Summer) 1976; Stephen M. Meyer, *The Dynamics of Nuclear Proliferation* (Chicago: The University of Chicago Press, 1984).

reached the point whereby they are capable of constructing and delivering a nuclear weapon at short notice.

This thesis does not aim to provide answers to either of these questions - they are the assumptions that underpin the thesis rather than the research questions to be explored. Although there is a need for the concept of nuclear proliferation to be developed further, this study is not the place for such an undertaking. It should also be pointed out that this thesis does not aim to provide insight into the technological aspects of nuclear proliferation. The technology imperative has long been discredited, and although technological constraints do influence the nature of a state's nuclear programme, they are not the central focus of this thesis.¹²

In this thesis, the term 'structural realism' refers specifically to the theory developed by Barry Buzan, Charles Jones, and Richard Little in *The Logic of Anarchy*. Buzan, Jones and Little appropriated this label in order to make the distinction between their own complex form of neorealism and the more parsimonious version of the theory developed by Kenneth Waltz.¹³ However, elsewhere in the literature, the terms neorealism and structural realism are used interchangeably to refer to the same theoretical approach. To avoid conceptual confusion, this thesis consistently adopts the narrow definition of structural realism used in *The Logic of Anarchy*, and avoids using this term in the generic sense.

3. Ontology and epistemology

The ontological and epistemological problems associated with a study of this nature also require some discussion. The thesis is based on the ontological assumption that objective reality exists independently from our language and theories about it. The question is how best can the social scientist apprehend this reality? A positivist or inductivist approach to acquiring knowledge - that is, one that builds on a secure foundation of indisputable facts - is especially problematic where the subject of nuclear proliferation is concerned. Even in

¹² See footnote number 3.

¹³ In *The Logic of Anarchy*, Buzan Little and Jones declare that 'it is our intention to take "Structural Realism" as our label for the much more wide-ranging theory of international relations that we intend to construct.' Buzan, Jones and Little, p. 9.

democracies, questions of national security are debated in secret, amongst small decisionmaking elites. Primary source material is classified and therefore scarce. In these circumstances, how is knowledge of proliferation dynamics to be grasped?

This thesis is based on the premise that, particularly where evidence is limited, theory can enhance our understanding of specific phenomena by revealing causal mechanisms. The suitability of different theories for performing this task can be measured by assessing whether or not their assumptions enhance our understanding of such phenomena. This does not entail a positivist quest for certainty but, even so, it presents methodological difficulties. If a decision has to be reached about which theory provides the most insight into proliferation causes, then it requires some form of testing. Case studies, based on an empirical analysis of former and current nuclear proliferants, should provide an adequate test. However, the dearth of reliable information about nuclear pressures and constraints inevitably leads to a research project which is open to criticism on methodological grounds. This does not invalidate the exercise, but it does expose its potential limitations.

The choice of case studies requires some explanation. Although there have been few cases of nuclear proliferation, a degree of selection has been necessary due to the practical constraints imposed on this thesis by time and space. The four states have been selected for the following reasons. First, they all sought to either develop or acquire a nuclear capability, and all achieved this goal, with varying degrees of success. Second, in each case, the goal was achieved after the precedent had already been set by the NWS - two during the Cold War and two after. Third, this selection of case studies illustrates a broad spectrum of persuasive and dissuasive factors for nuclear weapons acquisition. The security situation of each state has varied widely, and yet each has sought nuclear weapons. Finally, these particular cases were selected because they should constitute a fair test for neorealism. The expectation is that it would be difficult to generalise about the foreign and domestic policies of culturally and politically diverse states located in distinct

geographical regions: South Asia, Southern Africa, Northeast Asia and Eastern Europe. Explanations that abstract from the domestic level should, therefore, be ideally suited to the challenge. In other words there is an apparent close fit between the theoretical approach (neorealism) and the subject matter (the dynamics of nuclear proliferation). If the theory is found to be seriously flawed where it should be at its strongest, then the case against it is more convincing.

4. Methodology

The theoretical discussion in this study is based on an analysis of the contemporary debate on competing theories of nuclear proliferation. This debate has taken place in some of the leading journals of international relations theory, and in numerous books and edited volumes, between some of the discipline's leading theorists and their critics. Two methods have been devised to provide a comprehensive critique of this debate. First, all principal contributions, published before June 1998, have been consulted. Second, many of the major contributors to the debate have been interviewed during visits to the United States in 1996 and 1997. This included meetings with John Mearsheimer and Devin Hagerty in Chicago and Champaign, Kenneth Waltz and Etel Solingen at Berkeley, Scott Sagan at Stanford, Peter Lavoy in Monterey, and Steve Miller and Bradley Thayer at Harvard. The transcripts of these interviews are not included in the thesis, but they are cited where they add important points that are excluded from the existing literature.

Where possible, printed primary source material has been drawn upon to inform the case studies. This consists of official documents relating to the Indian and South African nuclear weapons programmes prior to 1966, which have recently been declassified or released by the National Security Archive, Washington, DC; the Public Records Office, Kew; the Australian National Archive, Canberra, and the Archive of Foreign Policy of the Russian Federation, Moscow. The documents include: diplomatic correspondence between the relevant embassies and central government; official proliferation reports based on intelligence analysis and assessments;

and government briefing papers, memoranda and policy papers. In addition, similar documents relating to more recent nuclear developments in North Korea have been consulted. This has been possible due to the U.S. freedom of information legislation, which grants the public access to official records. However, such access does not always contribute a great deal to our knowledge due to heavy censorship, as the telegram included in the Appendix demonstrates.

Efforts have been made to include as many non-Western primary and secondary sources as possible, although this has been complicated by the sensitivity of the subject and language constraints. Even so, a number of newspapers and memoirs, written and printed in the relevant countries, have been utilised and are cited in the text. In addition, a large number of indigenously produced books and articles have been consulted, as well as research carried out by ex-patriots of the different countries under consideration. This is a deliberate attempt to try and ensure that the research is as balanced as possible, despite the obstacles. Although this goal has proved to be attainable as far as materials relating to India, South Africa and Ukraine are concerned, North Korea has posed a more serious problem. Due to the nature of Pyongyang's closed society, little material is available, apart from a few unofficial accounts provided by North Korean defectors, which may be intentionally exaggerated or misleading. As a result, in the case of North Korea, the sources are unavoidably unbalanced, relying on South Korean and Western primary and secondary sources.

5. Contribution to the discipline

This thesis contributes to the literature on proliferation in two ways. First, it makes a theoretical contribution to the debate on how best to explain the dynamics of nuclear proliferation. It identifies the strengths and weaknesses of existing neorealist explanations of proliferation causes, and evaluates the extent to which structural realism can improve upon more parsimonious neorealist approaches. The latter provides an original contribution to the proliferation literature as, to date, this theory has not been used to explain

nuclear proliferation dynamics. This thesis presents structural realism as an alternative to existing neorealist approaches, identifying the areas where it can offer more insight, and the theoretical problems associated with using complex theory. In addition, on the basis of the conclusions drawn from this analysis, chapter seven highlights areas for future research into theoretical explanations of the dynamics of nuclear proliferation.

This thesis also makes an empirical contribution to the nonproliferation literature. Most studies have focused on explaining the dynamics of nuclear proliferation in the NWS, which is partly explained by the larger volume of primary sources relating to their nuclear weapons programmes (China is the exception). The motivations and conditions that have driven proliferation decisions elsewhere have not been given sufficient attention. It is important that work in this area is carried out, despite the methodological limitations, to enhance our understanding of proliferation causes at a time when many countries possess the requisite technological capability to develop nuclear weapons, and those that do not may be able to acquire them from technologically capable states. A greater understanding of the motivations and conditions that influence nuclear weapons acquisition and nuclear policy may assist international efforts to reduce proliferation pressures and, in doing so, help promote nuclear nonproliferation and disarmament.

Chapter Two
Theoretical Explanations of Nuclear Proliferation

One should not be allowed to construct a structural theory and then decline responsibility for [the] units' behaviour. In that case, the structure would have no 'grip' on the units.

Hans Mouritzen¹

This chapter sets out the neorealist framework on which this thesis is based. It identifies the core assumptions of neorealism, traces the evolution of different forms of the theory, and evaluates neorealist approaches to understanding international relations in general. The aim of this section is to expose the empirical limitations of parsimonious forms of neorealism, and the theoretical problems associated with developing more complex theory, such as structural realism. The main point to be drawn from this discussion is that recent attempts to improve neorealism's explanatory value borrow as much from neoliberal and world society approaches as they do from neorealism. The second section considers the advantages and disadvantages of using the dominant forms of neorealism and relevant forms of neoliberalism to understand the dynamics of nuclear proliferation. It begins by exposing the confusion surrounding neorealist explanations of proliferation dynamics - with particular reference to Kenneth Waltz's contribution to the debate. It then identifies the empirical weaknesses associated with neorealism as a theory of nuclear proliferation. Finally, it explores neoliberal and structural realist explanations of the phenomenon and, whilst acknowledging the theoretical drawbacks of complex theory, concludes that attempts to break down the boundaries between realist and neoliberal approaches have provided a theoretical approach with greater explanatory power. This does not, however, preclude the possibility that such theories could offer a greater understanding of proliferation dynamics when combined with complementary theories that derive explanations from additional sources, such

¹ Hans Mouritzen, 'Kenneth Waltz: A Critical Rationalist Between International Politics and Foreign Policy,' in Iver B. Neumann and Ole Waever (eds.), *The Future of International Relations: Masters in the Making* (London: Routledge, 1997), p. 76.

as cultural factors and ideas. This latter question will be addressed in chapter seven.

Part I: Neorealism: explanations and assumptions

1. Early versions of neorealism.

It is more accurate to describe neorealism as an approach rather than a theory. Although most critics of neorealism accept Kenneth Waltz's *Theory of International Politics* as its definitive exposition, Waltz's theory is one of many neorealist theories and models, albeit the most parsimonious and logically constructed. Most neorealists explain outcomes and behaviour, and derive predictions from a set of core elements, many of which Waltz defines more rigidly in his seminal work. Common to all neorealist theories and models are the assumptions that states are the primary actors in international politics and interact in an anarchic environment, without the protection offered by an overarching authority. Consequently, states are self-regarding and self-help is the system-mandated behavioural rule or principle.² As a result, threat to survival is the main problem generated by anarchy, leading states to weigh options and make decisions based on an assessment of the external environment and their strategic situation, and to select strategies that increase their security. Neorealists therefore seek to demonstrate that states act as if they are rationally responding to external constraints, selecting policies that enhance, rather than diminish, their chances of survival.

Neorealism shares many of the same core elements as classical realism, but differs on the crucial assumptions of what motivates the behaviour of international actors.³ Whereas classical realists focus on human nature, and man's lust for power as the primary cause of behaviour, neorealists stress the

² Self-help means that states must look out for their own security and well-being; they cannot rely on others to ensure their vital interests, nor are they likely to equate their own security and well-being with that of others.

³ There are two different ways of categorising the different forms of realism in international relations theory. The first, which is adopted here, distinguishes between classical realism and neorealism. Classical realism locates causes at the level of the individual (man's desire for power), whereas neorealism locates causes at the structural level (anarchy). Waltz's theory is considered to be a parsimonious version of the latter. The second categorisation, not adopted here, divides realism into three: classical realism, Realism and neorealism. Classical realism locates causes at the level of the individual, and both Realism and neorealism locate causes at the structural level, but neorealism refers specifically to the more parsimonious version of the theory developed by Waltz.

explanatory power of anarchy: states seek to expand their influence because they are forced to do so by the logic of the system. In *Man, the State and War* Waltz divided the different explanations of international politics into three categories, which help clarify the fundamental difference between the realist approaches.⁴ According to Waltz, classical realist analyses of behaviour focus on the characteristics of the individual, and represent a 'first image' approach to understanding international relations. At the other extreme, neorealist explanations focus on the characteristics of the international system, constituting the 'third image' of international politics. Between the two, the 'second image' derives predictions and explanations based on the characteristics of the state. Waltz stated that all three images require attention if the actions of any particular state are to be understood, but only third image explanations are generalizable. This is because first and second image explanations are prone to 'accidental causes' - the irrationalities of men, and the internal defects of states - whereas third image explanations are based on forces that remain constant over time and space.⁵ Most neorealists appear to share Waltz's view on this point, choosing to pursue this top-down analysis of international politics, rather than the bottom-up perspective of the classical realists.

Neorealism is sometimes portrayed as a refined, more scientific version of classical realism.⁶ The version of neorealist theory outlined by Waltz in 1959 was regarded as an important advance for international relations theory.⁷ Classical realism had relied on the unobservable laws of human nature to explain behaviour. In theoretical terms, the problem with these laws is that they are difficult to quantify and impossible to falsify - they are dependent on intuition rather than on scientific testing. In contrast, neorealism was believed to explain the observable laws of the international system, giving it more predictive power

⁴ Kenneth Waltz, *Man, the State and War: A Theoretical Analysis* (New York: Columbia University Press, 1959)

⁵ Waltz (1959), p. 166.

⁶ For example, Steve Smith, 'Paradigm Dominance in International Relations: The Development of International Relations as a Social Science,' *Millennium* 16 1987, p. 105.

⁷ The move away from classical realism did not start with the publication of *Man, the State and War* in 1959. An earlier formulation of the security dilemma, which emphasized the explanatory significance of international anarchy, was provided by John Herz in 'Idealist Internationalism and the Security Dilemma,' *World Politics* 2 1950. However, it was Waltz that developed neorealism into a fully-fledged theory of international relations.

and making it more acceptable to positivists. However, the version of neorealism set out in *Man, the State and War* suffered from theoretical weaknesses. Although Waltz attempted to separate the international realm from the domestic and individual realms in order to deal with it intellectually, he found that 'the partial quality of each image sets up a tension that drives one toward the inclusion of the others...[and as a result] ...one is led to a search for a more inclusive nexus of causes.'⁸ This led him to abstract his theory even further from reality to ensure that the structural level of analysis could be isolated.

2. Neorealism as a parsimonious theory

The blurring of levels of analysis evident in *Man, the State and War* - which, as will be explored below, is characteristic of more recent adaptations of neorealism - left Waltz open to criticism, as he was not able to answer fundamental questions such as: when is behaviour conditioned by the anarchic system, and when is it conditioned by the internal characteristics of the state? What kinds of political unit are likely to cooperate, and what kinds are likely to compete? If states have multiple goals, will certain kinds of political unit prioritize their goals differently? Waltz needed a theory of state in order to answer these questions, which, if it were to be incorporated into his theory, would complicate his analysis and restrict its application. Waltz set out to resolve this tension between unit level and system level in *Theory of International Politics*, by providing a clearer distinction between the system of states and the nature of the sovereign units. He was able to achieve this by introducing two additional assumptions: that states in the international system are functionally undifferentiated, and that the structure - or polarity - of the international system constrains state actions.⁹ By incorporating the concept of functionally undifferentiated states, Waltz was able to avoid being drawn into the complex debate on how unit and system should be linked. In this more sophisticated version of neorealism, the internal

⁸ Ibid., p. 230.

⁹ The concept of functional undifferentiation refers to the function of states. If their only goal is to survive as sovereign units in the international system, then they are functionally similar, or undifferentiated.

characteristics of the state are not considered to be important because, once states begin to coact, their actions are no longer controlled by their internal characteristics.¹⁰ The state is therefore left out of the analysis altogether, and all explanations of international behaviour are based on system structure: that is, the ordering principle of the international system (anarchy or hierarchy) and distribution of capabilities across the system (polarity).

This theory has the advantage of being more parsimonious and elegant than earlier versions of neorealism, but while it gains in simplicity and logical coherence, it loses in terms of explanatory power. In *Theory of International Politics*, Waltz uses his version of neorealism - which for the purposes of this thesis will be referred to as 'parsimonious neorealism' - to explain international outcomes such as war and peace. He argues that states are constrained by the international environment, by both the anarchic ordering principle and by the distribution of power. A bipolar system, in which two powers dominate the system, is likely to be more 'stable' than a multipolar system, in which power is shared between three or more states.¹¹

Parsimonious neorealism has proved to be very controversial. Common complaints include the accusation that it cannot account for fundamental changes in the international system, because unit level change is not taken into account.¹² This criticism has intensified over the last 10 years, as parsimonious neorealists have been unable to explain major international developments, such as the end of the Cold War and the end of bipolarity. Others claim that the theory is flawed because it does not take into account the institutional context of action, which should be considered a system level process rather than a unit level process, as Waltz argues.¹³ Of greater significance, as far

The concept of polarity refers to the number of the most powerful states in the international system. A system dominated by one powerful state is referred to as unipolar, two states as bipolar, and three or more states as multipolar.

¹⁰ Waltz (1979), p. 128.

¹¹ In this context, stability refers to the absence of war between the most powerful states.

¹² John Gerard Ruggie, 'Continuity and Transformation in the World Polity: Toward a Neorealist Synthesis,' in Robert O. Keohane (ed.), *Neorealism and its Critics* (New York: Columbia University Press, 1986), p. 142.

¹³ Robert O. Keohane, 'Theory of World Politics: Structural Realism and Beyond,' in Keohane, *op. cit.*, p. 195.

as this thesis is concerned, are Waltz's inconsistent statements concerning the functions and validity of this form of structural theory.

On numerous occasions Waltz has claimed that neorealism cannot explain unit level outcomes, such as foreign policy choices.¹⁴ According to Waltz, this is because his form of neorealism can only explain the international - and not the domestic - sources of behaviour, providing only a partial explanation of what drives decisionmaking.¹⁵ Yet on other occasions Waltz has made predictions of future behaviour based purely on parsimonious neorealism.¹⁶ This represents a fundamental conflict between the phenomena that Waltz claims his theory can attempt to explain, such as the outbreak of war or peace, and the phenomena that Waltz would like to be able to explain, such as foreign policy decisionmaking. He admits that, ideally, a theory that combines international and domestic explanations is needed if the latter is to be explained and predicted, but doubts whether it is possible to integrate the two levels of explanation into an acceptable theory.¹⁷ The problem is that, despite his proclaimed reservations over the use of his theory for explaining foreign policy behaviour, the phenomena that he does claim to be able to explain, such as balancing behaviour, are not purely systemic or international outcomes - they are alternative foreign policy strategies.¹⁸

3. Adapting neorealism

The discussion of the evolution of neorealism raises the question: what is a valid theory? According to Waltz, theories are not 'mere collections of laws' but are instead statements that explain laws or hypotheses.¹⁹ As such, they should be

¹⁴ Waltz (1959), p. 166; Waltz (1979), p. 71-73; Waltz, 'International Politics is Not Foreign Policy,' *Security Studies* 6 (Autumn) 1996, p. 57.

¹⁵ Author's Interview with Kenneth N. Waltz, Berkeley, 12 December 1996.

¹⁶ Waltz's comments on this subject will be discussed in the second part of this chapter.

¹⁷ Kenneth N. Waltz, 'Response To My Critics,' in Keohane, *op. cit.*, p. 343. Some neorealists have deliberately set out to try to integrate unit and structural explanations, although not in relation to nuclear issues. See Thomas J. Christiansen and Jack Snyder, 'Chain Gangs and Passed Bucks: Predicting Alliance Patterns in Multipolarity,' *International Organization* 44 (Spring) 1990, pp. 137-167; Barry Posen, *The Sources of Military Doctrine: France, Britain and Germany Between the World Wars* (Ithaca: Cornell University Press, 1984).

¹⁸ Miriam Fendius Elman also makes this point in her article 'The Foreign Policies of Small States: Challenging Neorealism in Its Own Backyard,' *British Journal of Political Science* 25 1995, p. 174.

¹⁹ Stephen Van Evera, *Guide to Methodology for Students of Political Science* (Cambridge: MIT Press, 1995).

should seek to explain cause and effect relationships, and should be generalizable beyond the case studies treated, is not disputed in this thesis. However, Waltz's theoretical conditions are overly restrictive. In some instances, a theory with more variables should be preferred over a theory that is more parsimonious because a slightly more complicated theory will explain more about a particular phenomenon. Choosing a theory or theoretical approach to explain international relations should be a question of 'maximizing leverage' rather than the pursuit of parsimony.²⁰ With this goal in mind, theories need not be perfect. For Waltz, any theory that fails on logical grounds is completely discredited. Yet imperfect theories can play an important heuristic role in facilitating intellectual progress. Rather than stagnating intellectual development in the search for perfect, logically constructed theories, international relations as a discipline can gain if more complex models and theories are explored. These approaches may fail on logical grounds, but still generate important questions and insights and may help in precipitating the development of additional theories.²¹ For example, the theory set out in *Man the State and War* failed on logical grounds because it failed to explain the relationship between the system and the units, yet it represents a superior version of neorealism to *Theory of International Politics*, because it provides more insight into the complexities of international relations.

Since the end of the Cold War, and the challenges that it brought to the assumptions underpinning parsimonious neorealism, theorists have returned to the question of how to combine systemic and unit levels of explanation in an operational way. Waltz raised this question in *Man, the State and War* but never resolved it. Acknowledging that 'sometimes unit level influences are too ubiquitous to be ignored,' Colin Elman has suggested that a number of domestic variables should be incorporated into neorealist theory to provide a multi-level analysis. He argues that this can be achieved in a number of ways: by adopting an axiomatic approach, whereby two theories are combined, one explaining

²⁰ Gary King, Robert O. Keohane and Sidney Verba make this point in *Designing Social Inquiry: Scientific Influence in Qualitative Research* (Princeton: Princeton University Press, 1994), pp. 104-105.

external pressures and the other explaining internal pressures;²² by adding variables to improve neorealism's empirical validity;²³ or by broadening the definition of threat, power and security so that these concepts can be applied at the unit and systems levels.²⁴ Andrew Moravcsik has also suggested that neorealism could be adapted if one or more of its assumptions were to be relaxed: the assumption that states are rational actors; that states all have the same mobilization capability; and that states are functionally undifferentiated.²⁵ According to Moravcsik, this would allow domestic and international politics to be integrated, and explain the different reactions of different states to similar events. If this is not possible, he suggests an axiomatic approach: the use of systemic explanations to serve as the 'first cut' of any analysis, and domestic explanations to account for anomalies.²⁶

The most systematic attempt to provide an operational version of neorealism, that integrates system and unit level causes, has been made by Barry Buzan, Charles Jones and Richard Little in *The Logic of Anarchy*. They identify the useful core of neorealist theory before introducing a number of different ideas that distinguish their version of neorealism from anything that had come before. They accept the traditional neorealist assumptions that states are unitary, rational actors that seek power and security through self-help in order to survive in the anarchic international system.²⁷ They also accept the neorealist preoccupation with structure, based on the belief that it is necessary to transcend the individual in order to understand human behaviour. Lastly, they continue to stress the primacy of the political sphere in international relations and the focus on the state as the most important 'defining unit' of the international

²¹ The author shares the view presented by Ethan B. Epstein in 'Is Realism Dead? The Domestic Sources of International Politics,' *International Organization* 49 (Autumn) 1995.

²² Colin Elman, 'Horses for Courses: Why Not Neorealist Theories of Foreign Policy?' *Security Studies* 6 (Autumn) 1996, p. 37.

²³ Ibid.

²⁴ Ibid.

²⁵ Andrew Moravcsik, 'Integrating International and Domestic Politics: A Theoretical Introduction.' Paper presented at the PIPES Seminar, University of Chicago, 31 May, 1991.

²⁶ Moravcsik describes this approach as 'two-level games theory.' He integrates domestic and international explanations by stressing the unique position that statesmen occupy in both domestic and international politics. He argues that states face a double security dilemma which influences behaviour at both levels.

²⁷ Buzan, Jones and Little, pp. 7-11.

system.²⁸ Beyond this, Buzan, Jones and Little relax key assumptions of parsimonious neorealism, and redefine central concepts.

The most fundamental difference between structural realism and Waltz's parsimonious version of neorealism involves their different definitions of the international political system. Waltz argues that the system is composed of two levels - units and structure - which provide distinct sources of explanation. As indicated earlier, he argues that international outcomes can be explained by focusing exclusively on structural considerations, which consist of the ordering principle of the system (anarchy), and the distribution of capabilities across the system (polarity). All other sources of explanation are relegated to the unit level which, Waltz argues, should be dealt with in a separate theory. Buzan, Jones and Little argue that this definition of system is unnecessarily restrictive. They redefine the system, claiming that it is composed of three levels: units, interactions and structure. They argue that different characteristics of each level are significant as they produce shoving and shaping forces, which impact on each other and change over time. This allows for a much more dynamic theory of international politics, which links the different levels of explanation and, in doing so, provides a more inclusive picture of systemic - rather than exclusively structural - causes.²⁹

As the authors of *The Logic of Anarchy* point out, a full system theory requires the unit level to be explicitly integrated into the theoretical framework. A theory that provides a logical link between unit and structure, showing that they are mutually constitutive, gains an extra dimension by synthesizing different sources of explanation for the same phenomenon. As far as theory-building is concerned, it is not sufficient to observe that unit level factors matter - they need to be incorporated into the theory in an operational manner. In structural realist theory, Buzan, Jones and Little attempt to do this by

²⁸ Ibid., p. 11.

²⁹ Jack Snyder also attempts to combine domestic and international sources of explanation. He constructs a domestic politics model of international politics that stays within the realist tradition. His aim is to explain the over-expansion of the great powers over the last 200 years, which he argues occurred as a result of industrialization and domestic coalitions, combined with structural pressures. Jack Snyder, *Myths of Empire: Domestic Politics and International Ambition* (Ithaca: Cornell University Press, 1991).

introducing the following theoretical constructs: relational and attributive power, interaction capacity and deep structure.

The division of the concept of power into relational and attributive power provides the first step in the process of integrating the unit level into the theory. Attributive power refers to the absolute power that a state possesses in terms of its internal characteristics, components and processes.³⁰ Relational power, on the other hand, is positional rather than absolute, and refers to the pattern of distribution of military and economic power amongst the units in the system.³¹ Whereas Waltz focuses exclusively on relational power as a source of explanation, Buzan, Jones and Little incorporate both types into their theory, arguing that they both influence behaviour and outcomes. This is because, according to structural realism, the level of attributive power determines the level and type of interaction between states.³² States with low attributive power will also experience low interaction capacity, and are likely to suffer from varying degrees of international isolation as a result. This is because these capabilities provide the strongest link between independent sovereign states - it is through these channels that military, economic, political and cultural interaction occurs.

The concept of deep structure also integrates the unit level into systemic theory. Whereas relational power refers to the distribution of capabilities across the system (shallow structure), deep structure refers to the ordering principle of the system - which in this case is anarchy - plus the functional differentiation of the units.³³ Whereas Waltz treats anarchy as a static concept, separating it from the unit level, Buzan, Jones and Little redefine it in more dynamic terms, providing another link between the levels of explanation. They argue that the deep structure of the system is affected by the level of interaction capacity, which is determined by the attributive power of the units. When interaction capacity is low due to a lack of social and political cohesion, the structural effects of anarchy will be observable as the members of the system

³⁰ Buzan *et. al.*, pp. 67-69.

³¹ *Ibid.*

³² *Ibid.*, pp. 78-80.

³³ *Ibid.*, p. 65.

define their interests independently and are more likely to come into conflict with each other. However, in a system where interaction capacity is high, the structural effects of anarchy can be overridden. This is referred to as 'mature anarchy' and is characterized by cooperation rather than conflict because the members of the system have a common interest in maintaining the status quo, and have developed shared norms in order to maintain stability.³⁴ The logic of structural realism suggests that conflict in the international system will become less likely as time goes on. As the technological and societal capabilities of states improve, interaction capacity will increase and a more mature form of anarchy will be generated.

This presents a more optimistic view of international politics than classical realism and other forms of neorealism because it allows for the possibility of cooperation, and thus results in a more linear and less cyclical interpretation of international behaviour.³⁵ It can help explain international outcomes which more parsimonious forms of neorealism cannot explain, such as the change in polarity that occurred at the end of the Cold War. However, more pertinent as far as this thesis is concerned is the question of whether structural realism is more able than existing versions of neorealism, to shape and inform the analysis of foreign policy and, in particular, nuclear policy.³⁶ This question will be examined in the second part of this chapter.

4. Alternative systemic theories: the neorealist-neoliberal synthesis

Despite using the language of neorealism, structural realism has as much in common with neoliberalism as it does with neorealism.³⁷ Unlike classical liberal approaches and early forms of neoliberalism, recent versions of the theory incorporate the core neorealist assumption that states are the principal actors in

³⁴ Ibid., p. 71.

³⁵ Asked what he thought of structural realism, Kenneth Waltz replied that he did not consider it to represent a credible theory. Waltz argues that theories are not improved by adding variables in an attempt to move closer towards reality. Interview with Kenneth Waltz, Berkeley, 12 December 1996.

³⁶ However, Buzan, Jones and Little do admit that structural realism may be better at interpreting and explaining history rather than current policy because the theory is so abstract. Ibid., p. 13.

³⁷ David A. Baldwin argues that structural realism is accurately described as a form of neoliberal institutionalism. David A. Baldwin, 'Neoliberalism, Neorealism and World Politics,' in David A. Baldwin (ed.), *Neorealism and Neoliberalism: The Contemporary Debate* (New York: Columbia University Press, 1993), p. 4.

the international system and that they act in a self-interested manner under anarchy.³⁸ However, there are subtle but important differences between neorealism and the newest forms of neoliberalism. A discussion of these will highlight the neoliberal underpinnings of structural realism.

Crucially, although they both incorporate the general assumption, neoliberals and neorealists differ over the nature and consequences of anarchy. Whereas neorealists stress that anarchy creates fear and insecurity, neoliberals stress that the effects of anarchy can be tempered by interdependence and the creation of institutions. Both agree that international cooperation is possible under anarchy, but they differ as to the ease and likelihood of its occurrence. Neorealists argue that cooperation is unlikely for two reasons. First, under anarchy, states fear that if they cooperate, they have no way of knowing whether their counterparts will secretly break agreements and cheat.³⁹ As a result, cooperation would leave the state vulnerable and endanger its survival. Second, states are reluctant to cooperate because they fear that their adversaries may gain more from negotiations than themselves, and may use this advantage offensively.⁴⁰ In other words, they are sensitive to relative gains and this limits the incentives to cooperate.

Neoliberals argue that neorealists exaggerate the effects of anarchy and as a result cannot account for peace and cooperation in the

³⁸ Before the 1980s, liberals and neoliberals dismissed the realist thesis that states seek power and security and are prone to conflict rather than cooperation. They argued that states are capable of being other-regarding, and over time, due to improved education, the diffusion of knowledge and technology, and man's ultimate perfectability, international relations will be characterised by peace and harmony. New neoliberals also stress that international relations are evolving along lines that will promote greater freedom and harmony, but unlike their predecessors, they accept that the anarchic international system impedes cooperation due to the lack of a central authority to prevent cheating. However, unlike their neorealist counterparts, neoliberals stress that the effects of anarchy can be overcome with the help of institutions, which promote peace and cooperation. Mark W. Zacher and Richard A. Matthew, 'Liberal International Theory: Common Threads, Divergent Strands,' in Charles W. Kegley, Jr., (ed.), *Controversies in International Relations Theory: Realism and the Neoliberal Challenge* (New York: St. Martin's Press, 1995), pp. 117-118; Scott Burchill, 'Liberal Internationalism,' in Scott Burchill and Andrew Linklater with Richard Devetak, Matthew Paterson and Jacqui True, *Theories of International Relations* (New York: St. Martin's Press, 1996), p. 35; Joseph M. Grieco, 'Anarchy and the Limits of Cooperation: A Realist Critique of the Newest Liberal Institutionalism,' in Robert J. Beck, Anthony Clark Arend and Robert D. Vander Lugt (eds.), *International Rules: Approaches from International Law and International Relations* (New York: Oxford University Press, 1996); David Mitrany, *A Working Peace System* (Chicago: Quadrangle Press, 1966); Edward S. Morse, 'The Transformation of Foreign Policies: Modernization, Interdependence and Externalization,' *World Politics* 22 (April) 1970; Robert O. Keohane and Joseph S. Nye, Jr., *Power and Interdependence: World Politics in Transition* (Boston: Little, Brown, 1977).

³⁹ Joseph M. Grieco, 'Realist International Theory and the Study of World Politics,' in Michael W. Doyle and G. John Ikenberry (eds.), *New Thinking in International Relations Theory* (Boulder, CO: Westview Press, 1997), p. 175.

⁴⁰ *Ibid.*; Grieco (1996), p. 165.

international system. According to neoliberals, although anarchy can impede cooperation, whether it does or not depends on the nature of states and how they define their interests. States differ in their functions: they have multiple goals and prioritize them differently.⁴¹ Although all states aim to survive, their strategies and tactics for achieving this differ.⁴² States with similar interests and values are unlikely to regard each other as threats.⁴³ This reduces or eliminates sensitivity to relative gains and therefore the principal obstacle to cooperation. For these states, cooperation leads to mutual gains that are regarded as absolute. Under these conditions, interaction leads to cooperation, which eventually leads to interdependence, or 'mature anarchy.'⁴⁴ According to neoliberals, two obstacles prevent states from engaging in this kind of behaviour: first, concerns about cheating; second, conflicting values. The first problem can be overcome through the creation of institutions that reduce the level of uncertainty and cheating.⁴⁵ The second problem is more difficult to solve, although some neoliberals argue that it can be alleviated through the spread of

⁴¹ Charles Lipson, 'International Cooperation in Economic and Security Affairs,' *World Politics* 37 (October) 1984; Zacher and Matthew, p. 118; Ole R. Holsti, 'Theories of International Relations and Foreign Policy: Realism and Its Challengers,' in Kegley (1995), *op. cit.*, p. 43.

⁴² For many states, survival is important, but so are the interests of individuals. Such states will pursue strategies and foreign policies that meet both objectives. *Ibid.*, p. 119.

⁴³ Helen Milner, 'The Assumption of Anarchy in International Relations Theory: A Critique,' in Baldwin, *op. cit.*, p. 161.

⁴⁴ This version of systemic theory, which occupies the middle ground between the extremes of realism and liberalism, also fits within the English School of international relations theory. Rationalism, which has evolved in the work of Karl Deutsch, Martin Wight, Hedley Bull and Adam Watson, posits that accommodation and compromise are possible in the context of anarchy when states become conscious of certain common interests and common values. This leads them to form a society of states, which is bound by a common set of rules and institutions. Unlike many liberals, who argue that liberal democracy forms the basis of cooperation and compromise, rationalists consciously reject the thesis that states must share the same ideas about democracy and justice before they will tolerate each other. They argue that states with different beliefs about what is legitimate and just on a domestic level can share the same commitment to order at the international level. According to such theorists, order in itself has moral value, forming the common bond between states. This leads to the creation of institutions to ensure that peace is maintained. Structural realism could incorporate either approach, depending on how attributive power is defined. Barry Buzan, 'From International System to International Society: Structural Realism and Regime Theory Meet the English School,' *International Organisation* 47 1993, pp. 335-352; Hedley Bull, *The Anarchical Society: A Study of Order in International Politics* (London: Macmillan, 1977), p. 82; Martin Wight, *Systems of States* (Leicester: Leicester University Press, 1977), p. 192; Hedley Bull and Adam Watson, *The Expansion of International Society* (Oxford: Oxford University Press, 1984), p. 9; Adam Watson, 'Hedley Bull, States Systems and International Societies,' *Review of International Studies* 13 1987, p. 151; Stanley Hoffman, 'International Society,' in J. D. B. Miller and R. J. Vincent (eds.), *Order and Violence: Hedley Bull and International Relations* (Oxford: Oxford University Press, 1990), pp. 23-24; Michael W. Doyle, 'Liberalism and World Politics Revisited,' in Kegley (1995), *op. cit.*, p. 83.

⁴⁵ Robert Axelrod, *The Evolution of Cooperation* (New York: Basic Books, 1984); Robert Axelrod and Robert O. Keohane, 'Achieving Cooperation Under Anarchy: Strategies and Institutions,' *World Politics* 38 (October) 1985; Arthur Stein, 'Coordination and Collaboration: Regimes in an Anarchic World,' in Stephen D. Krasner (ed.), *International Regimes* (Ithaca: Cornell University Press, 1983); Burchill, p. 61; Zacher and Matthew, p. 117; Baldwin, p. 3-6; Robert O. Keohane, 'Institutional Theory and the Realist Challenge After the Cold War,' in Baldwin, *op. cit.*, p. 271.

international norms and/or by greater communication and technological progress which promotes interaction between states.⁴⁶

This overview of neoliberal assumptions and theses shows that structural realism and neoliberalism have a great deal in common. Buzan, Jones and Little admit that their theory avoids 'the silly issue of choosing between either interdependence or anarchy.'⁴⁷ As a result, structural realism can provide more insight into international relations than parsimonious neorealism or earlier forms of neoliberal theory. However, from a theoretical perspective this presents certain problems. Although Buzan, Jones and Little do not fall into the same trap as many neoliberals - who often fail to clarify their assumptions - their theory does suffer from the malaise that affects all multi-level theories: their theory is so complex that when it is used to explain a phenomenon it can look like 'thick description' rather than theoretical analysis. This makes generalisations difficult and leads to confusion over the relative importance of different causes. This problem can be partially overcome in a well-organised analysis, but the theoretical weaknesses are fundamental and insurmountable. However, theoretical parsimony is worth sacrificing in the interests of greater understanding. As Mark Zacher and Richard Matthew point out 'the complexity of the causal processes does, of course, undermine theoretical parsimony, but if the world is not simple, thinking it is simple does not enhance intellectual understanding.'⁴⁸

Part II: Neorealist and neoliberal explanations of nuclear proliferation

1. Neorealist explanations

Neorealism proposes that the anarchic structure of the international system causes states to compete for survival, leading to insecurity which provokes nuclear proliferation. At first sight, this appears to be a very satisfying theory of

⁴⁶ Miller, p. 165; Keohane, p. 274; Zacher and Matthew, p. 124.

⁴⁷ Buzan *et. al.*, p. 78. Other theorists have also called for the dichotomy between realist and liberal theories of international relations to be broken down. Holsti, p. 58; Zacher and Matthew, p. 140; James Lee Ray, 'Promise or Peril? Neorealism, Neoliberalism and the Future of International Politics,' in Kegley (1995), *op. cit.*, p. 351; Baldwin, 24; Keohane, p. 293.

⁴⁸ Zacher and Matthew, p. 140.

nuclear proliferation. It performs the functions that a good theory should: not only does it propose the cause of the phenomenon, it also explains what causes the cause, and it does this using a minimal number of variables. This simplicity can be represented by an arrow diagram where: 'B' is the dependent variable (that is nuclear proliferation - the phenomenon being caused); 'A' is the independent variable (that is the serious threat - the phenomenon doing the causing); 'r' is the intervening variable (that is insecurity - the theory's explanation); and 'C' is the assumption (that is anarchy - the conditions under which the theory will operate).



At its simplest level, this is the relationship between cause and effect that all neorealist - and some neoliberal - explanations of nuclear proliferation are based upon. However, most approaches are far more complex than this diagram would suggest. Although all neorealists, and some neoliberals, follow this basic framework for analysis, different theorists add different assumptions that alter the explanatory and predictive power of their approaches. This section explores these alternative neorealist and neoliberal explanations of nuclear proliferation, highlights their strengths and weaknesses, and accounts for the variety of predictions that can be made using the same core assumptions.

i. Balance of power theory

Balance of power theory is the most persistent - and perhaps the most controversial - of all theories of international relations. The term itself has been heavily criticized for causing considerable semantic and conceptual confusion within the discipline. One such critic, Inis Claude, Jr., has argued that 'the trouble with balance of power is not that it has no meaning, but that it has so many

meanings.⁴⁹ This becomes a problem when those who use the concept not only fail to provide precise clues as to its meaning, but also 'slide blissfully from one usage of the term to another and back again, frequently without posting any warning that plural meanings exist.'⁵⁰

It is evident that the concept of balance of power is riddled with ambiguity, as illustrated by Ernst B. Haas, who found at least eight distinct meanings for the term.⁵¹ However, there are three principal conceptual usages of balance of power in international relations literature which require some explanation. First, the term is often used to describe the policy by which most states, at most times, seek to preserve their security in a competitive international environment. Traditionally, the methods adopted to achieve this goal have centred on arms racing between adversaries, or the diplomatic struggle for alliances, in order to match or exceed the military power of competitors. This is the definition of balance of power politics that was built on the ideas of Niccolo Machiavelli and Thomas Hobbes, and originally expounded by classical realists such as Hans Morgenthau and more recently by neorealists such as John Mearsheimer.⁵² The second meaning of the term describes not the policy choices of individual states, but the characteristics of the international system, which, it is often argued, has an inherent tendency to produce an even distribution of power through alliance formations. According to theorists who take this approach, balancing behaviour is not the rational policy choice of wise political leaders, but the inevitable consequence of structural pressures. This usage is less common and more controversial, and is adopted by parsimonious neorealists such as Kenneth Waltz and Stephen Walt.⁵³ The third meaning of the term describes an even distribution of power within a system or subsystem: a state of affairs in which no state is so powerful that it can endanger others.

⁴⁹ Inis L. Claude, Jr., *Power and International Relations* (New York: Random House, 1962), p. 13.

⁵⁰ *Ibid.*, p. 22.

⁵¹ These include: 1) any distribution of power, 2) equilibrium or balancing process, 3) hegemony or the search for hegemony, 4) stability and peace in a concert of power, 5) instability and war, 6) power politics in general, 7) a universal law of history, and 8) a system and guide to policymakers. Ernst B. Haas, 'The Balance of Power: Prescription, Concept or Propaganda?' *World Politics* 5 (July) 1953, pp. 442-477.

⁵² Niccolo Machiavelli, *The Prince* (Harmondsworth: Penguin, 1961); Thomas Hobbes, *Leviathan* (Oxford: Clarendon Press, 1909); Morgenthau; Mearsheimer (1993).

⁵³ Waltz (1979); Stephen M. Walt, *The Origins of Alliances* (Ithaca, NY: Cornell University Press, 1987).

Under such an arrangement, states are able not only to coexist peacefully, but also to develop progressively more civilized relations with each other by evolving a network of rules. This is the rationalist definition of balance of power, which, unlike the first and second definitions, has a strong normative element.⁵⁴

The first meaning of balance of power is adopted here, providing the following explanation of proliferation causes. According to this realist exposition of balance of power theory, states build nuclear arms to increase their chances of survival in an anarchic international environment. When faced with a serious conventional and/or nuclear threat, states that possess the necessary resources will develop nuclear weapons to balance against the capabilities of their adversaries. This response is known as 'internal balancing,' and can lead to the development of a proliferation chain.⁵⁵ However, not every state will follow this pattern of behaviour. States that lack the resources or knowledge to develop sophisticated weapons will have to maximize their power through other means, known as 'external balancing.' This involves allying with a more powerful state, whose capabilities either match, or exceed the capabilities of the adversary. The term 'nuclear umbrella' describes this arrangement, as the insecure state is forced to shelter under the weapons provided by its security provider.

Proponents of this theory argue that, when faced with an adversary with greater strategic capabilities, a proliferation decision will inevitably be taken in states that lack a reliable ally. Based on this hypothesis, Mearsheimer explained why, in 1992, Ukraine reneged on its commitment to renounce nuclear weapons, and decided to keep the nuclear arsenal inherited from the Soviet Union. According to Mearsheimer this was inevitable, because Ukraine needed the weapons to balance against a nuclear-armed, and conventionally superior, Russia. Despite the intense international pressure on Ukraine to relinquish the weapons on its territory, Mearsheimer predicted that Ukraine would keep its

⁵⁴ Martin Wight, *Power Politics* (London: RIIA, 1986); J. Ann Tickner, 'Revisioning Security,' in Ken Booth and Steve Smith (eds.), *International Relations Theory Today* (Cambridge: Polity Press, 1995); Richard Little, 'Friedrich Gentz: Rationalism and the Balance of Power,' in Ian Clark and Iver B. Neumann (eds.), *Classical Theories of International Relations* (London: Macmillan, 1996).

⁵⁵ The terms 'internal balancing' and 'external balancing' were used by Waltz (1979), p. 168. The term 'proliferation chain' was used by Dunn and Overholt in their article 'The Next Phase in Nuclear Proliferation Research,' *op. cit.*

nuclear capability 'regardless of what other states say and do.'⁵⁶ Bradley Thayer has also used balance of power theory to explain proliferation decisions taken in the NWS, and in Israel, India, Pakistan, South Africa, Iraq, Iran and North Korea. According to Thayer, each state was motivated by the desire to match the conventional or nuclear capability of neighbouring states. In the same article, he also predicts that Japan will take the decision to develop nuclear weapons to match proliferation by North Korea.⁵⁷

Balance of power theory suffers from serious omissions which helps explain why it is not supported by the empirical record. It cannot explain why, when faced with the same strategic threat, some states engage in balancing behaviour whilst other do not. In addition, it offers little insight into why some states are forced to rely on internal balancing despite their desire to acquire a nuclear umbrella. South Africa, North Korea and Ukraine all preferred to balance externally, but were unable to secure reliable allies. Why was this? Moreover, it cannot explain why a state might choose to dismantle its nuclear weapons even when there is no change in the capabilities of the state it is balancing against. For example, Ukraine gave up the weapons stationed on its territory, despite Russia's retention of the world's second largest nuclear arsenal, and despite Kiev's failure to secure a firm and legally binding security guarantee from the United States.⁵⁸ Lastly, it cannot shed any light on why a state might decide to pursue a nuclear capability when there is no obvious increase in the capabilities of an adversary. Again, South Africa provides an example, as its initial proliferation decisions were not triggered by an adversary's sudden acquisition of a nuclear capability or superior conventional forces.

There are two main problems with balance of power theory that account for its lack of explanatory power. First, balance of power theory focuses exclusively on capabilities to explain proliferation dynamics. However, evidence

⁵⁶ Mearsheimer (1993), pp. 54-58.

⁵⁷ Thayer (1995), p. 466.

⁵⁸ Ukraine secured the vague 'security assurances' offered to all non-nuclear signatories of the NPT, but did not manage to obtain the explicit security guarantees that it had consistently demanded in return for disarmament in 1992-4. This is explained in detail in Chapter 6.

shows that nuclear proliferation decisions are triggered by states' expectations of their adversary's intentions and not just their capabilities. In other words, states are more concerned about threats than they are about capabilities. The problem with all structural theories is that they cannot account for the domestic dynamics that shape threat perceptions and influence strategic choices. Second, balance of power theory defines power and security too narrowly. Both are defined only in terms of strategic considerations, which leads to a limited interpretation of interests. The empirical record shows that states have multiple goals and seek different forms of power; their behaviour cannot be explained or predicted on the basis of their strategic goals.

ii. Parsimonious neorealism

Balance of power theory is often adapted to include the assumption that the distribution of capabilities across the system will affect nuclear decisionmaking. Rather than focusing exclusively on the strategic capabilities of adversaries, and the balancing incentives that these generate, some theorists also argue that polarity plays an important role in the proliferation equation.

In common with balance of power, polarity is an ambiguous term which requires some conceptual clarification. It refers to the number of the most powerful states (poles) which, it is argued, determine the structure of the international system. A global system, subsystem, or region can be unipolar, bipolar, multipolar, or mixed, depending on the distribution of power between the units (which are most often states, but sometimes include non-state actors such as multinational corporations). Some theorists have used this abstract notion of structure to explain international outcomes such as war and peace, arguing that structural pressures and constraints created by the distribution of power have predictable stabilising or destabilising effects on the international system.⁵⁹ This

⁵⁹ The question that has interested international relations theorists since the 1960s is: which system is more stable and less prone to conflict, a bipolar system or a multipolar system? This is the central question running through Waltz's *Theory of International Politics* and Mearsheimer's article 'Back to the Future: Instability in Europe After the Cold War,' *International Security* 15 (Summer) 1990. Both theorists argue that bipolar systems are more stable. Michael Brecher and Jon Wilkenfeld both disagree with this hypothesis, pointing out that the bipolar Cold War period was not especially peaceful or stable in their article 'International Crises and Global Instability: The Myth of the Long Peace,' in Charles W.

apparent causal relationship is hotly debated within the discipline - all the more so because theorists involved in the debate cannot agree on how polarity should be defined or measured, or how and when changes in polarity occur.

At least four categories of determinants of polar status can be identified in the literature utilising polar models: 1) military power, 2) economic power, 3) political power, and 4) a combination of military, economic, political, and technological power.⁶⁰ Military power as the principal determinant of polar status is the most widely accepted of these categories, although even this has been open to debate, with some theorists arguing that the possession of nuclear weapons should be the overriding military determinant of polarity, and others arguing that broader military capabilities should be taken into account, including delivery capabilities and conventional might.⁶¹ This thesis adopts Waltz's measurement of polarity which, though imprecise, is widely used. According to Waltz, a combination of military superiority (including the possession of nuclear weapons and sophisticated conventional capabilities) and superior economic and technological power, provides certain states with sufficient power to influence the behaviour of less powerful states through the threat or use of force.⁶²

The question of how and when the distribution of power has changed over time is also highly controversial. There is some agreement that the immediate post-war period should be described as bipolar, due to the division of

Kegley Jr. (ed.), *The Long Postwar Peace* (New York: Harper Collins, 1991). The authors define stability in different ways. Waltz refers to the absence of conflict between the major powers, whereas Brecher and Wilkenfeld refer to the absence of war between all states.

⁶⁰ Those who define polarity in military terms include: Steven Spiegel, 'Bimodality and the International Order: The Paradox of Parity,' *Public Policy* (Winter) 1970; Bernard C. Cohen, 'National-International Linkages: Super-Polities,' in James L. Rosenau (ed.), *Linkage Politics* (New York: Free Press, 1969); John J. Weltman, 'Managing Nuclear Multipolarity,' *International Security* 6 (Winter) 1981-2. Those who focus on economic determinants include: Bruce M. Russett, *Trends in World Politics* (New York: Macmillan, 1965). Those who focus on political/ideological determinants include: Richard N. Rosecrance, *Action and Reaction in World Politics* (Boston: Little, Brown, 1963); Raimo Vayrynen, 'Bipolarity, Multipolarity, and Domestic Political Systems,' *Journal of Peace Research* 32 (iii) 1995. Those who identify multiple determinants include: Morgenthau, p. 341; Raymond F. Hopkins and Richard W. Mansbach, *Structure and Process in International Politics* (New York: Harper and Row, 1973); Waltz (1979), pp. 176-177.

⁶¹ Amongst those who argue that nuclear weapons determine polarity are Weltman, p. 183. Most theorists contest this categorisation, arguing that nuclear power is too narrow a basis on which to measure polarity. The weakness in the nuclear argument derives from a failure to distinguish between what Stanley Hoffmann refers to as the supply of power and its uses. States may possess great stockpiles of nuclear weapons, but due to the nuclear taboo, these may only be used as a deterrent and cannot be used to coerce. As a result, conventional military capabilities and technological and economic power also have to be measured. Stanley Hoffmann, *Gulliver's Troubles or the Setting of American Foreign Policy* (New York: McGraw Hill, 1968); Alastair Buchan, 'A World Restored,' *Foreign Affairs* (July) 1972; Morgenthau, pp. 29-30.

⁶² Waltz (1979), pp. 176-178.

power between the United States and the Soviet Union, but this has also been disputed, with some theorists disagreeing over the exact date that the bipolar structure emerged, others arguing that unipolar or multipolar structures developed, and still others dividing bipolarity into periods of 'tight' and 'loose' structural arrangements.⁶³ This inconsistency is inevitable, given the lack of consensus over how polarity should be measured and defined. However, since the beginning of the 1990s, there has been a trend amongst neorealists to define the entire Cold War period as bipolar, and the post-Cold War period as multipolar.⁶⁴ This classification has been criticised in the literature for grossly oversimplifying reality,⁶⁵ but it remains the dominant organising principal amongst neorealists, even for those who disagree over the criteria for measuring polarity. This division of time and space into Cold War bipolarity and post-Cold War multipolarity is the structural classification adopted by Waltz in *The Spread of Nuclear Weapons*, and the approach taken in this thesis.

According to Waltz's logic, a multipolar system is more likely to create proliferation pressures than a bipolar system. In a bipolar world, superpower-client arrangements are likely to be strong, because the superpowers will try to prevent the outbreak of war in their spheres of interest. This will increase the incentives for the superpowers to offer security guarantees to less powerful states, thereby reducing proliferation pressures in the system. In a multipolar world, the commitment of the superpowers to their client states is likely to diminish as the competition between them dissipates. If the client state is then faced by a severe threat to its security - such as the emergence of a

⁶³ Those who argued that a bipolar structure emerged after the Second World War include: Herz, pp. 111-166; Morgenthau, p. 343; Aron, pp. 136-149; Kaplan (1962), pp. 36-45. Those who give different dates for the emergence of bipolarity include: K.J. Holsti (1945-1955), Zbigniew Brzezinski (1948-1957), Buchan (1956/58-1963/65). K. J. Holsti, *International Politics: A Framework for Analysis* (Englewood Cliffs, NJ: Prentice Hall, 1972); Zbigniew Brzezinski, 'How the Cold War Was Played,' *Foreign Affairs* (October) 1972; Alastair Buchan, *The End of Bipolarity*. Adelphi Paper No. 91 (London: IISS, 1972). Haas argued that the post-war period began as unipolar in 1945 and became tripolar in 1956 in Ernst B. Haas, *Collective Security and the Future International System* (Denver, CO: University of Denver, 1967-68). Hopkins and Mansbach argued that the structure of the international system was tight bipolar (1947-1956) and loose bipolar (1957-1962). Hopkins and Manbach, p. 125.

⁶⁴ Mearsheimer (1990); Thayer (1995); Sagan and Waltz; Vayrynen; Buzan, Jones and Little; Frankel (1993); Ole R. Holsti, 'International Systems, System Change, and Foreign Policy: Commentary on "Changing International Systems,"' *Diplomatic History* 15 (i) 1991.

⁶⁵ Critics include: Richard Lebow, 'The Long Peace, the End of the Cold War, and the Failure of Realism,' *International Organization* 48 (Spring) 1994 and R. Harrison, 'What Was Bipolarity?' *International Organization* 47 (Winter) 1993.

nuclear adversary - the state is unlikely to be confident that its ally will provide a nuclear umbrella, and as a result will be forced to develop an independent nuclear capability. In addition, new security relationships will be more difficult to obtain, as the superpowers reign-in their overseas commitments and try to avoid becoming embroiled in regional disputes.

This version of balance of power theory, which is based on Waltz's more parsimonious version of neorealism, has been adopted by theorists to predict the proliferation of nuclear weapons after the Cold War. Most notably, Benjamin Frankel uses the concept of polarity to build what he calls 'an explicit and accessible theory of nuclear weapons proliferation.'⁶⁶ According to Frankel, the end of bipolarity will reduce and weaken superpower guarantees, leading to a 'more unvarnished form of anarchy in which systemic attributes such as the security dilemma and self-help will be accentuated.'⁶⁷ He concludes that 'the accelerated proliferation of weapons of mass destruction will be an early and noticeable consequence of this change.'⁶⁸ Waltz also followed this line of argument in *The Spread of Nuclear Weapons: A Debate*.

In the context of nuclear developments in the early 1990s, this approach was much more convincing. At the time, nuclear issues were attracting international attention: a UN inspection team had recently unearthed evidence that Iraq had been close to acquiring a nuclear capability before the outbreak of the Gulf War; both Ukraine and North Korea were causing serious proliferation concern; it was believed that the break-up of the Soviet Union would facilitate the spread of nuclear technology to trouble spots in the Middle East and Far East; and the South African government admitted that it had managed to build a secret nuclear arsenal. However, this crisis period passed, and it is noticeable that the world has not witnessed a sudden spate of new proliferation cases. Moreover, it is also worth pointing out that those states that were causing proliferation

⁶⁶ Frankel (1993), p. 37.

⁶⁷ Ibid.

⁶⁸ Ibid.

concerns in the early 1990s had begun developing nuclear weapons programmes *during* bipolarity, and not purely since the end of the Cold War.

This is not to suggest that this version of neorealism has nothing to offer in the search for explanations of proliferation causes. There is evidence to support the case that North Korea's nuclear exploits have been partly motivated by the insecurity created by the lack of a powerful and reliable ally at the end of the Cold War. In addition, Ukraine's nuclear posturing between 1992-94 appears to have been partly motivated by a desire to acquire security guarantees from the United States, which proved extremely difficult to obtain in the new international environment. It is therefore fair to say that this helps to explain these cases, but it would be inaccurate to describe parsimonious neorealism as 'an explicit theory of nuclear proliferation' because it omits crucial variables, leading to inaccurate predictions and explanations. For example, parsimonious neorealism cannot explain why Ukraine did eventually transfer all the tactical and strategic nuclear weapons that it had inherited from the Soviet Union to Russia by 1996. Moreover, parsimonious neorealism cannot explain why South Africa developed nuclear weapons during bipolarity and gave them up under multipolarity.

2. Waltz's contribution to the debate: a source of confusion

Waltz has been a central contributor to the debate over the consequences, rather than the causes, of nuclear proliferation. Primarily, he uses deterrence theory to explain the impact that nuclear proliferation is likely to have on international stability, arguing that because nuclear weapons induce caution and restraint, their spread is likely to have positive effects.⁶⁹ The debate stimulated by Waltz's comments has been fierce, and has overshadowed the question of why states build nuclear arsenals in the first place. However, since the end of the Cold War, Waltz has broached the subject of proliferation causes. In *Peace, Stability and Nuclear Weapons*, he lists seven reasons why states want nuclear

⁶⁹ Kenneth N. Waltz, *The Spread of Nuclear Weapons: More May Be Better*, Adelphi Paper 171 (London: IISS, 1981); Waltz (1990).

weapons. He argues that proliferation decisions are taken in order to: balance the nuclear capability of an adversary; compensate for the lack of a reliable ally; develop an independent nuclear capability in the absence of a nuclear umbrella; balance the superior conventional strength of an adversary; avoid being drawn into an economically ruinous conventional arms race; provide the ultimate weapon for offensive purposes; or enhance international prestige.⁷⁰ Two important observations can be made regarding this list of variables. Firstly, it includes strategic, political and economic incentives for acquiring nuclear weapons. This is important because it indicates that Waltz defines security more broadly than his previous preoccupation with deterrence theory would suggest. Secondly, he lists both international and domestic causes, and even though he lays more stress on the former, his acknowledgement of the role of the latter has important theoretical implications. Waltz has often claimed that the causes of state behaviour are so complex that they cannot be explained without third *and* second image theories. He asserts that ideally, the two levels of explanation should be combined into one theory, but argues that this may be impossible.⁷¹

This dilemma is exposed in Waltz's analysis in *The Spread of Nuclear Weapons: A Debate*. Whereas Waltz seems confident that deterrence theory can explain the effects of nuclear proliferation, his analysis of the causes of nuclear proliferation is undeveloped and inconsistent. This is partly because his main objective is to explain why, in his opinion, the further spread of nuclear weapons is unlikely to have a detrimental impact on international peace and stability. His discussion of proliferation causes therefore merits less attention. However, there are also deeper, more complex reasons for his inconsistent approach. Despite acknowledging that the decision to go nuclear requires both structural and domestic explanations, Waltz uses parsimonious neorealism to predict the spread of nuclear weapons in Northeast Asia. Yet, elsewhere in his analysis, he undermines this theory by bringing in unit level explanations. This

⁷⁰ Kenneth N. Waltz, *Peace, Stability, and Nuclear Weapons*. IGCC Policy Paper No. 15 (University of California, 1995), pp. 5-6.

⁷¹ Waltz (1965), p. 166; Waltz (1979), p. 40 and 73; Waltz (1986), p. 343-4; Kenneth N. Waltz, 'International Politics is Not Foreign Policy,' *Security Studies* 6 (Autumn) 1996, p. 57.

sets up a tension between the two explanations which remains unresolved throughout his analysis.

A brief summary of Waltz's argument illustrates this point. Using North Korea as a case study, Waltz argues that a state will pursue nuclear weapons if it feels weak, isolated and threatened.⁷² In North Korea's case, Pyongyang wants nuclear weapons because it lacks a reliable ally and faces an adversary that is technologically and economically superior, and that has the backing of the United States. According to Waltz, 'the more vulnerable North Korea feels, the more strenuously it will pursue a nuclear program,' putting 'pressure on South Korea and Japan to develop comparable weapons.'⁷³ Waltz goes on to state that it would not surprise him if a proliferation chain developed in the region as a result of these external pressures. This explanation is based on the core assumptions of neorealism plus the assumption that states imitate each other and are functionally undifferentiated once they begin to interact. In other words, Waltz is using parsimonious neorealism at this point to predict nuclear developments in Northeast Asia. This is incompatible with Waltz's explanation of proliferation dynamics at the beginning of the chapter, where he states that 'unstable states are unlikely to initiate nuclear projects.'⁷⁴ In other words, he argues that, when faced with a security dilemma, stable states are more likely than unstable states to develop nuclear weapons. Besides being a highly questionable hypothesis, as this thesis will show, this conclusion undermines the assumption that states are functionally undifferentiated and calls into question his predictions concerning Northeast Asia, which rely exclusively on structural forces. The question remains: are all states functionally alike, and is this a valid assumption on which to base explanations of nuclear proliferation? In *The Spread of Nuclear Weapons: A Debate*, Waltz answers 'yes' and 'no' to the same question, provoking serious doubts about the validity of his analysis.

⁷² Waltz, 'More May Be Better,' in Sagan and Waltz, *op. cit.*, p. 38.

⁷³ *Ibid.*, p. 40.

⁷⁴ *Ibid.*, p. 10.

3. Alternative systemic theories of nuclear proliferation

Parsimonious neorealism provides a useful starting point for understanding the security dilemma that can push states along the path to an independent nuclear capability or a nuclear umbrella. But, as Waltz's analysis reveals, it excludes too many necessary variables to be a useful framework for explaining nuclear proliferation. The main problem is that state behaviour is influenced by domestic as well as structural factors, and parsimonious neorealism abstracts from the unit level. Although the objective of theory-building is to simplify reality rather than to describe it in all its complexity, there is a point at which the picture that a theory presents is too far from reality to be of any explanatory value. This is the case with parsimonious neorealism: the theory is too spare and as a result only half the picture emerges.

Most theorists dealing with the causes of nuclear proliferation have recognized the limitations of Waltz's spare theory - including Waltz himself. Reflecting the more general trend in international relations theory, many scholars have borrowed extensively from neoliberal theory to try and build a more satisfying theory of nuclear proliferation. In many cases the boundary between the two approaches has been broken down. In the past, proponents of neoliberal theories used them to explain international cooperation in the economic sector rather than in the security realm.⁷⁵ This is because the prospects for cooperation appeared to be dramatically different in the two realms. It was observed that, in the economic sphere, states could be persuaded to follow rules, making short-term sacrifices in order to realize long-term gains. However, where questions of war and peace are concerned, states were considered less likely to compromise and take risks.⁷⁶ To a certain extent, this division between issue areas remains, but since the end of the Cold War, theorists have been more willing to use certain neoliberal assumptions to explain conflict and cooperation over security matters - including nuclear proliferation.

⁷⁵ Lipson, pp. 2-12; Axelrod and Keohane, pp. 232-233; Keohane, pp. 39-41.

⁷⁶ Lipson, p. 18.

This section explores these synthetic approaches - all of which include domestic factors and international imperatives to explain proliferation causes. However, the discussion will show that some adaptations are stronger than others from a theoretical perspective. It reveals that, although it is easy to expose the limitations of parsimonious neorealism as a theory of nuclear proliferation - and a mini industry has emerged, based on this exercise - it is difficult to propose a logical and convincing alternative.⁷⁷ The challenge of integrating different levels of analysis into one operational theory has proved to be virtually insurmountable. The theories that emerge are all flawed in some way - often because they fail to provide an explicit link between levels of analysis.

i. Richard K. Betts.

Betts includes domestic level explanations in his effort to explain the causes of nuclear proliferation - but he does this implicitly, without tackling the thorny question of how this can be achieved theoretically.⁷⁸ Betts argues that insecurity is the most important cause of nuclear proliferation, but unlike Frankel and Mearsheimer, he takes his analysis further and poses the fundamental question missing from their explanations: why do states respond differently to the same threat?⁷⁹ Betts brings in domestic factors to answer this question, arguing that certain types of state have higher threat perceptions than others. 'Pygmies' - nations threatened by much larger neighbours - are more likely to develop nuclear weapons than larger states.⁸⁰ 'Paranoids' - states faced with unpredictable, often weaker, adversaries - are more likely to develop nuclear weapons than states that are able to predict and understand the behaviour of their neighbours.⁸¹ 'Pariahs' - states that are isolated from the rest of the world - are more likely to

⁷⁷ Since the end of the Cold War, a remarkable number of articles have been dedicated to advancing and critiquing neorealist explanations of nuclear proliferation in international relations journals, especially *Security Studies* and *International Security*. These are listed in the bibliography.

⁷⁸ It is difficult to pigeon-hole some realists into clearly defined classical realist and neorealist categories. Betts and Davis straddle both versions of realism, emphasizing the importance of the anarchic structure of the international system and the human desire for power as the primary forces driving state behaviour. Zachary S. Davis, 'The Realist Nuclear Regime,' *Security Studies* 2 (Spring /Summer) 1993, p. 80 and Richard K. Betts, 'Paranoids, Pygmies, Pariahs and Nonproliferation Revisited,' *Security Studies* 2 (Spring/Summer) 1993, p. 107.

⁷⁹ Betts, p.107.

⁸⁰ Ibid.

⁸¹ Ibid., p. 108.

develop nuclear arsenals than states that are integrated into the international community.⁸² Betts argues that pariahs pose the most serious problem to nonproliferation efforts: whereas the United States may be able to reduce the insecurity of the pygmies and paranoids by offering security guarantees, it may not wish to protect the pariahs for what he calls 'other reasons.'⁸³ According to Betts's logic, the more isolated a state becomes, the more insecure it is likely to feel when faced with a serious threat to its security, and the more it is likely to rely on internal balancing to overcome the threat. Although he does not explain it in theoretical terms, here Betts combines balance of power theory with the concept of the 'weak state' to provide an explanation of proliferation causes which is less generalisable than parsimonious neorealism, but stronger empirically.

ii. Zachary S. Davis.

Davis also implicitly recognizes the importance of unit level characteristics, although he focuses on trying to explain nuclear restraint rather than nuclear proliferation. He defines interests more broadly, developing a version of balance of power theory in which power is disaggregated to include economic as well as strategic and political power. He argues that not every state views nuclear weapons as a potentially useful form of power due to the security dilemma: the predictable reactions of other countries make nuclear status self-defeating.⁸⁴ Over time, states that have felt this way have cooperated to prevent the further spread of nuclear weapons, because it is in their shared interests to do so. This alignment of interests has led to the evolution of a nonproliferation norm, and to the creation of a 'realist nuclear regime.'⁸⁵ It follows from this line of reasoning that not all states share the same security perceptions or functions. Not all states in the anarchic international system imitate each other. All states share the will to

⁸² Ibid.

⁸³ Ibid., p. 107. The 'other reasons' are not specified, although they probably include domestic considerations such as regime-type, human-rights abuses and state-sponsored terrorism.

⁸⁴ Davis, p. 81.

⁸⁵ Ibid., pp. 82-87.

survive, but how they pursue this vital goal varies: some will cooperate with other states, others will not. This is an implicit indication that domestic factors need to be taken into account in order to explain state behaviour because the way states behave depends not only on the structure of the international system, but also on the nature of the units.

iii. Etel Solingen

Solingen accepts the neorealist thesis that insecurity created by the anarchic international system explains the causes of proliferation in most cases. However, she argues that this needs to be combined with a second image explanation - that is, one which locates explanations at the unit level - to explain why different states adopt different nuclear postures. In particular, she believes that it is necessary to look at domestic political structures to explain why some states - which she describes as nuclear fence-sitters - develop nuclear weapons programmes, but decide not to develop overt nuclear arsenals. She argues that this occurs because democratic states pursuing liberal economic policies rely on political interaction and the global economy, and therefore cannot afford to alienate current and potential trading partners and allies by weaponizing their nuclear option. In taking this approach, Solingen shows that states have multiple goals, contrary to the assumptions of neorealists. She argues that these goals are determined by the domestic political structure of the state as well as the external pressures created by the international system. Moreover, she highlights the point that nuclear proliferation is a process involving many stages and that, to a certain extent, unit level characteristics determine how far up the proliferation ladder a state is prepared to venture.⁸⁶

⁸⁶ Etel Solingen, *The Domestic Sources of Nuclear Postures: Influencing Fence-sitters in the Post-Cold War Era*, IGCC Policy Paper; Etel Solingen, 'The Political Economy of Nuclear Restraint,' *International Security* 19 (Fall) 1994; Etel Solingen, 'The New Multilateralism and Nonproliferation: Bringing in Domestic Politics,' *Global Governance* 1 (May-August) 1995; Author's interview with Etel Solingen, 26 November 1996, Berkeley, California.

iv. Glenn Chafetz

Chafetz argues that the world is divided into two parts: the core - which refers to the industrialized states of Western Europe, North America and Japan; and the periphery - which refers to the agriculturally based, industrializing states of the developing world.⁸⁷ Members of the core are unlikely to develop nuclear weapons in the post-Cold War environment, because they do not regard each other as military threats. They share a high level of economic interdependence, as well as similar political and cultural values, and are more likely to cooperate with each other in order to maintain the status quo.⁸⁸ Conflicts of interest do occasionally occur in this sphere, but tend to occur over economic and societal - rather than strategic - concerns, and are more likely to be resolved through diplomatic rather than military means.⁸⁹ Nuclear proliferation is more likely to occur amongst members of the periphery, where states are more likely to challenge the status quo. This is because relations between members of the periphery are characterized by low levels of economic interdependence and cultural interaction, leading states to define security in narrow, strategic terms.⁹⁰ As a result, states are more likely to regard each other as military threats, and are more likely to resort to acquiring nuclear weapons to ensure their survival.

According to Chafetz, the key to understanding proliferation causes lies in the concept of identity. He argues that the interests and identities of states are not exogenously given, but rather develop as a result of domestic developments and interactions with other states.⁹¹ On the domestic level, a government legitimizes its power by upholding certain values, leading to the

⁸⁷ Glenn Chafetz, 'The End of the Cold War and the Future of Nuclear Proliferation: An Alternative to the Neorealist Perspective,' *Security Studies* 2 (Spring/Summer) 1993.

⁸⁸ *Ibid.*, p. 134.

⁸⁹ In neoliberal institutionalist terminology, Chafetz refers to this as a 'pluralistic security community' whereas neorealists refer to this as 'mature anarchy,' or 'anarchical society.' This is a good example of the crossover between the two theories, as both terms describe the same phenomenon: cooperation in a competitive international environment. Chafetz, p. 128; Buzan *et. al.*, p. 168.

⁹⁰ Chafetz, p. 139.

⁹¹ The idea that states develop their own identities as a result of their interaction with other states has been developed by a number of international relations theorists. Some refer to themselves as 'constructivists' or 'reflectivists' and others consider themselves to be neorealists. See Thomas M. Franck, *The Power of Legitimacy Among Nations* (New York: Oxford University Press, 1990); Nicholas Onuf, *World of Our Making: Rules and Rule in Social Theory and International Relations* (Columbia, SC: University of South Carolina Press, 1989); John Gerard Ruggie, 'Human Rights and the Future International Relations Community,' *Daedalus* 112 (Fall) 1983; and Alexander Wendt, 'Anarchy is What States Make of It: The Social Construction of Identity,' *International Organization* 42 (Spring) 1992.

development of national interests. These interests then affect the state's interaction with other states, leading to the formation of national identity as, for example, good citizen, leader of the free world, or challenger of the status quo.⁹² The way states define their security will therefore depend on how its interests and identity develop. The history of its interaction with other states, and the values that governments use to legitimize their power will lead states to identify their security competitively, individualistically or cooperatively.⁹³

This provides the following explanation of nuclear proliferation: states develop nuclear weapons when they feel insecure. The level of insecurity experienced by the state is dependent of the nature of its interaction with other states which, in turn, is dependent on how the state defines its interests. Where the national interests used to legitimize a government clash with those of a competitor, threat perceptions are likely to be heightened, and a proliferation decision is likely to be triggered by a major event - such as a conventional war or a demonstration of nuclear capability. In other words, the major causes of nuclear proliferation are insecurity and fear, which are caused by both the anarchic structure of the international system, and by conflicting interests and identities.

v. Buzan, Jones and Little

Structural realism has not been used to explain the causes of nuclear proliferation, although Buzan, Jones and Little stated that their theory 'can certainly be used to shape and inform the analysis of foreign and domestic policy.'⁹⁴ The main advantage that this theory possesses over neorealism is that, in its attempt to incorporate the mutually constitutive relationship between unit and system, it provides a more inclusive picture of proliferation causes. The main advantage that it possesses over other systemic approaches, such as the variations on neoliberalism outlined above, is that it forms an operational link

⁹² Chafetz, p. 137.

⁹³ Ibid.

⁹⁴ Buzan *et. al.*, p. 13.

between the different levels of analysis and is therefore stronger from a theoretical perspective.

Structural realists would argue that proliferation dynamics can be explained by changes in relational and attributive power in the context of anarchy. Changes in relational power, caused by the acquisition of nuclear weapons by state 'A,' will create insecurity and release proliferation pressures into the system. Whether or not state 'B' will respond to those pressures will depend on the characteristics of the state (specifically, the level of attributive power), the state's interaction capacity, and the nature of anarchy. When anarchy is unconstrained because state 'B' has insufficient attributive power (and therefore low interaction capacity) it will try to acquire nuclear weapons. This is because, in this context, nuclear weapons will provide the strategic security and political power that the state cannot acquire through interaction and cooperation. However, if state 'B' possesses high levels of attributive power (and therefore high interaction capacity), proliferation will not occur because the security imperative is weakened by interdependence and the existence of common interests. The additional explanation offered by structural realism can therefore be summarised in one sentence: a lack of relational and attributive power inhibits interaction, creating strong proliferation pressures.

Part III: Conclusion

Parsimonious neorealism provides a useful starting point in any analysis of proliferation dynamics, but it does not provide sufficient insight into the causes of complex phenomena. As Waltz admits, any attempt to explain or predict domestic outcomes, such as the formulation of nuclear policy, must at least combine second and third image explanations into a truly systemic - rather than purely structural - theory. Waltz has argued that this may be theoretically impossible due to the difficulties involved in constructing a theory that links both levels in a logical and operational manner. However, this view has been disputed in this chapter. A well-organised attempt to achieve this synthesis, even if

logically flawed, is preferable to the sparse explanations of nuclear dynamics offered by parsimonious neorealism. As part II of this chapter has illustrated, the flourish of recent attempts to bring the state back into neorealist theory prove that this view is widely shared in the discipline.

Structural realism appears to be both empirically superior to parsimonious neorealism and balance of power theory and theoretically superior to alternative systemic approaches. On this basis, it has been selected as the theory that will be tested in this thesis alongside the more traditional versions of neorealism. This chapter has shown that structural realism has the *potential* to offer a convincing theory of nuclear proliferation. The remainder of this thesis is devoted to discovering whether or not this is the case, and whether additional theories could be used to enrich structural realist explanations. This will be achieved by: 1) assessing the extent to which changes in relational and attributive power, and interaction capacity, can explain the nuclear policies of India, South Africa, North Korea and Ukraine, and 2) identifying theories that complement structural realism to achieve maximum explanatory leverage. The former will be the principal focus of the case studies, the latter will be the main objective of the conclusion.

Chapter Three

India's Nuclear Weapons Policy

A weak country has no options. The U.S. has preferred China, Pakistan and Israel to India because in their view India has no will to power.

K. Subrahmanyam, 1982.¹

A wall of secrecy has surrounded India's nuclear programme, making information difficult to obtain, and leading to intense speculation regarding the intentions of India's political leaders and the nature of its nuclear development. This secrecy has even surpassed Israel's attempts to keep its nuclear programme under wraps, and is due, in part, to India's complete control of the nuclear fuel cycle from the local production of uranium to the construction of research and power reactors and the recovery of plutonium through reprocessing. However, the little evidence of India's nuclear development that has filtered through is enough to suggest that India has a large and sophisticated nuclear programme, and has the option to deploy weapons within a short space of time. Until recently, however, India appears to have resisted the temptation to develop a nuclear arsenal. For 24 years, this made India unique as the only state known to have tested a nuclear device without following it up with an overt weaponised nuclear programme.

India has long claimed to have the option to change its nuclear status at short notice.² It possesses four unsafeguarded reactors, two plutonium production reactors, and three reprocessing plants in operation as well as a centrifuge facility for enrichment.³ India was also believed to have stockpiled a large quantity of unsafeguarded weapon grade plutonium that could allow it to produce hundreds of nuclear devices.⁴ New Delhi has also been involved in the

¹ K. Subrahmanyam, 'Do We Really Have A Choice?' *World Focus* 2 (June) 1981, p. 6.

² In 1990, Dr. Iyengar, head of BARC - the research and development establishment of the atomic bureaucracy in the mid-1980s - was asked how long it would take India to fabricate a nuclear weapon. He responded that the length of time it takes India to weaponise will 'depend on how much time we get.' 'Atoms and the Man,' *Island* (March) 1990, p. 7.

³ Naiz Naik, 'South Asia: The Nuclear Scene,' in Darryl Howlett (ed.), *South Asia, Nuclear Energy and Nuclear Non-Proliferation* (Southampton: PPNN, 1994).

⁴ Until recently, India was thought to possess enough unsafeguarded plutonium to produce between 60 and 203 nuclear devices. The wide margin between the estimates are an indication of the mystery surrounding India's nuclear capability. Indian politicians and scientists decline to provide precise figures, although the scientists have indicated that the real

successful development of delivery systems. In February 1988, a surface-to-surface missile with a range of 250 kilometres, the Prithvi, was flight-tested. The following year, the Agni missile - which has a potential range of 2500 kilometres - was launched.⁵ In 1992, the Indian technological development came one step closer to the development of an Inter-Continental Ballistic Missile (ICBM) with its successful test of the Augmented Satellite Launch Vehicle (ASLV-3).⁶ This could be converted to ICBM delivery systems to give India global nuclear reach by the late 1990s.⁷

In May 1998, some of the mystery surrounding India's nuclear capabilities and intentions was removed when New Delhi conducted a series of five nuclear tests. The tests confirmed U.S. intelligence reports that India has been working on thermonuclear weapons, although international experts have raised doubts over official claims regarding the intensity and yield of the blasts.⁸ Whatever the genuine level of India's technological sophistication, the government's intentions were made clear. Following the tests, the Defence Research and Development Organisation (DRDO) chief, A. P. J. Abdul Kalam, claimed that 'weaponisation is now complete. The command and control system which existed in various forms will now be consolidated.'⁹ This statement may have been premature, but the expectation is that India will use the information acquired through the tests to develop a wide range of nuclear weapons. The statements issued by the BJP indicate that India has now abandoned 24 years of nuclear ambiguity, and is likely to follow in the footsteps of the five *de jure* NWS

figure is less than 50 devices. However, the report put out by the Task Force of the Carnegie Endowment estimates that India probably has enough plutonium to manufacture over 200 devices of the 15 to 20 kt range. Naik, p. 30; *Nuclear Weapons and South Asian Security* (Washington: Carnegie Endowment for International Peace, 1988), p. 11 and 16; W. H. Donnelly and Z. Davis, *India and Nuclear Weapons. CRS Issue Brief* (Washington, DC: Library of Congress, 1992).

⁵ Chris Smith, *Security, Sovereignty, and Nuclear Weapons in South Asia*. Faraday Discussion Paper No. 20 (London: Council for Arms Control, 1993), p. 18.

⁶ Raju G. C. Thomas, *South Asian Security in the 1990s*. Adelphi Paper No. 278 (London: IISS, 1993), p. 66.

⁷ *Ibid.* There is also evidence that India is engaged in building nuclear submarines capable of launching nuclear weapons, and statements by senior air force officers which confirm that fusing tests have been carried out on aircraft. Naik, p. 30; W. P. S. Sidhu, *The Development of an Indian Nuclear Doctrine since 1980*. Unpublished Ph.D. Thesis, University of Cambridge, February 1997.

⁸ The combined yield reported by the Indian officials was twice as big as recordings made outside the country. To date, there is no reliable and independent seismic data on the blasts from the Indian side. This has led to claims that the thermonuclear device can be nothing more than a tritium-boosted device. Another theory is that the Indian scientists H-bomb could have fallen short of expectations. T.S. Gopi Rethinaraj, 'Indian Blasts Surprise the World, But Leave Fresh Doubts,' *Jane's Intelligence Review* (July) 1998, p. 20.

⁹ *Ibid.*

and weaponise its nuclear capability. It has even been suggested that, on the basis of the most recent estimates of India's stockpiles of fissile material, India may now be in the position to build an arsenal of 390 to 470 nuclear weapons.¹⁰ This would provide India with a potential nuclear arsenal bigger than that of the UK, and in the same league as the French and Chinese.

This chapter charts the history of India's nuclear weapons programme, identifies the forces that have shaped India's nuclear behaviour over the last 40 years, and explores the question of how far structural realism can be used to explain this particular example of nuclear proliferation. It seeks to answer five questions. First, what domestic and international conditions have preceded major decisions to advance India's nuclear capabilities? Second, what have been the triggering events in each case? Third, how have ideas and perceptions regarding the utility of nuclear weapons changed in India over the 40 years? Fourth, which organisations and individuals have had an important influence over nuclear policy? Last, is it possible to provide a convincing theoretical explanation of these developments?

Part I: India's predominantly peaceful nuclear programme, 1948-1964

The early history of India's nuclear programme is dominated by two individuals: the physicist Homi Bhabha and the Indian Prime Minister, Jawaharlal Nehru. Research began in the 1940s, when Bhabha persuaded Nehru that nuclear energy could be used to overcome India's economic backwardness, and the Atomic Energy Commission (AEC) was set up with this in mind. Under Bhabha's guidance as President of the AEC, financial constraints were removed from nuclear research, and a nuclear reactor was built using enriched fuel and scientific knowledge from the British atomic energy programme. Progress was swift due to the commitment and close cooperation of Bhabha and Nehru, and by August 1956 India's research reactor went critical. The crucial question

¹⁰ This estimate takes into account commercial reactor plutonium, which the UK was able to use in nuclear weapons. W.P.S. Sidhu, 'India Sees Safety in Nuclear Triad and Second Strike Potential,' *Jane's Intelligence Review* (July) 1998, p. 23.

relating to India's nuclear development during this period is: what were New Delhi's intentions during this period? Most accounts of India's nuclear programme stress its peaceful nature at this early stage of its evolution, but a closer look at the evidence suggests that, although the programme was predominantly peaceful during the 1950s and early 1960s, the possibility of exploiting the military potential of India's nuclear development was under consideration by the scientific establishment and the political elite.

1. Early nuclear development: Bhabha and Nehru

During Nehru's time as Prime Minister the nuclear programme was kept broadly within the bounds of peaceful research, although not completely. Evidence indicates that the question of whether India should develop a nuclear weapons capability was being given careful consideration by India's nuclear decisionmakers at this time, and by Nehru himself. Nehru is generally believed to have been fiercely opposed to the development of nuclear weapons, but although this is intimated in his official policy statements, which emphasised India's belief in universal disarmament and the evil of nuclear weapons,¹¹ some of his comments on the subject are more ambiguous.¹² In a speech to parliament in July 1957 he stated that 'we are not interested in making [atomic] bombs even if we have the capacity to do so.'¹³ Here Nehru promises that India will not fabricate nuclear weapons, but he does not rule out the possibility of acquiring a nuclear capability. Elsewhere, Nehru asserted that: he was not afraid of the atom bomb; India must be wary of 'atomic colonialism by particular powers;' and where nuclear weapons are concerned a Gandhian approach may not be possible.¹⁴ These statements expose a level of ambivalence that raises questions over Nehru's beliefs on the subject, or at least illustrates a level of

¹¹ Nehru's official stance is clearly stated in a letter to Dwight Eisenhower, the U.S. President, in which he denounces nuclear weapons and expresses frustration over the slow progress made by disarmament talks. U.S. National Security Archive (U.S. NSA), Washington, DC, *White House Letter # 3531*, 24 July 1960. Declassified 11 October 1995.

¹² Authors that stress Nehru's opposition to nuclear weapons include: Mohammed B. Alam, *India's Nuclear Policy* (New Delhi: Mittal Publications, 1988), pp. 10-18; Michael Brecher, *Nehru: A Political Biography* (London: Oxford University Press, 1969); and U. R. Rao, *India's Nuclear Policy* (Delhi: Gandhi Peace Foundation, 1963).

¹³ Nehru, speech in parliament, 24 July 1957. Quoted in Rao, p. 8.

¹⁴ Nehru, address at the University of Chicago, 27 October 1949; speech in parliament 17 May 1954; appeal to the USA and the USSR, New Delhi, 27 November 1957. Quoted in Rao, pp. 2-12.

flexibility in his attitudes to the nuclear issue. A report sent by the Australian Department of External Affairs to the Australian High Commission in New Delhi confirms this point. In this secret telegram, the views of an Indian intelligence source are discussed revealing that 'the plutonium process admittedly had some industrial uses but its main significance lay in its availability if needed for military manufacture.'¹⁵ He also asserts that Nehru 'had known this when he authorised the plutonium project...[he] had not committed India against making nuclear weapons.'¹⁶

Other evidence reinforces the argument that India's nuclear programme may not have been exclusively geared to harnessing nuclear energy for peaceful purposes during this period. Bhabha himself was openly in favour of developing a nuclear weapons capability, and made no secret of this. As early as 1958 he told the British physicist, Lord P. M. S. Blackett, that he believed India should develop nuclear weapons, and in his autobiography, Raja Ramanna describes how Bhabha pressurised Nehru to go nuclear. Although it is not known whether Bhabha's pressure tactics succeeded, a thesis published in 1962, by Beaton and Maddox, argues that during Nehru's premiership India developed the peaceful uses of nuclear energy for power generation *and* explored the option to make nuclear weapons in case China did so.¹⁷ The comments that Bhabha made to India's former Foreign Secretary, T. N. Kaul, while he was staying with him in Moscow in 1963, indicate that this speculation may have been correct. He stated that India's scientists had developed the capability to explode a cheap atom bomb underground even at that time, but that the government had decided

¹⁵ Australian Archives, Canberra: Series No. A1838/2, Item No. 919/12/9 Part 1. *Secret Inward Savingram #38122* from the Australian Department of External Affairs (DEA) to the Australian High Commission (AHC), New Delhi, 13 November 1964. Requested 22 December 1997.

¹⁶ *Ibid.*

¹⁷ Ajit Bhattacharjea, 'The Fallacy of Playing it Tough.' *World Focus* 2 (June) 1981, p. 40. According to Beaton and Maddox, India had the option to explode a bomb in 1963-4. This is based on their assessment of the early stages of India's nuclear development in the 1950s. Australian Archives, Canberra: Series No. A1838/2, Item No. 919/12/9 Part 1. *Restricted Memorandum #170* from the Australian Embassy, Moscow, to the DEA, Canberra, 25 February 1965. Furthermore, in 1961, on the basis of shared intelligence with the UK, the Australian DEA estimated that India had 'the capacity to develop a nuclear capability.' Australian Archives, Canberra: Series No. A1838/2, Item 901/5/2 Part 2. *Secret Report* on a paper by I.G. Bowden on the composition of the Security Council, no date (although traced to September 1961). Requested 18 December 1997.

not to test it.¹⁸ This decision may have been influenced by elite opposition to nuclear weapons during this period.¹⁹ However - as the documents below will show - it is more likely that, during the 1950s and 1960s, India's nuclear decisionmakers hoped that India would be able to acquire a nuclear umbrella, and would not have to rely on indigenous nuclear development to guarantee its security.

2. The 'China threat'

The emergence of the People's Republic of China (PRC) as an independent state in 1949 had a crucial impact on Nehru's threat perceptions. It posed both political and military threats to India. On a political level, China challenged India's major foreign policy goals: neutrality, leadership of the third world, and great power status. Beijing's communist leaders were not prepared to accept a bourgeois state at the head of the Non-Aligned Movement (NAM), just as they were unwilling to allow another capitalist permanent member of the UN Security Council. As a result, they took every opportunity to discredit India at international fora and in secret diplomatic negotiations. As a result of China's machinations and broader global opposition to India's political ambitions, New Delhi's political power was waning by the early 1960s; its optimism of the previous decade, dashed.

China also challenged New Delhi's military security, threatening to undermine India's territorial integrity. Nehru became acutely conscious of this threat during the 1950s, as China probed for new military positions along the disputed Himalayan border. His fears were confirmed when China's troops

¹⁸ T. N. Kaul, 'We Have Tarried Too Long,' *World Focus* 2 (June) 1981, p. 7. Bhabha also mentioned a missile programme as far back as 1960, although he said it could not be developed to the extent of the atomic programme. *Restricted Memorandum #170* from the Australian Embassy, Moscow, to the DEA, Canberra, 25 February 1965.

¹⁹ The public debate about nuclear weapons is covered in Major-General D. Som Dutt, *India and the Bomb*, Adelphi Paper No. 37 (London: IISS, 1966); Frank E. Couper, 'Indian Party Conflict on the Issue of Atomic Weapons,' *Journal of Developing Areas* 3 (January) 1969; Ashis Gandhi, 'The Bomb, the NPT and Indian Elites,' *Economic and Political Weekly* (August) 1972; and Ashis Nandy, 'Between Two Gandhis: Psychopolitical Aspects of the Nuclearization of India,' *Asian Survey* 14 (November) 1974. The importance attached to the role of public opinion in India's decisionmaking varies considerably from one account to another. Two extremes of the argument are presented by Ashok Kapur, who claims that public opinion played a crucial role in his article 'Nuclear Weapons and Indian Foreign Policy,' *The World Today* (September) 1971, and Stephen Philip Cohen, who claims that public opinion had no impact on nuclear decisionmaking in India in his chapter 'Nuclear Neighbours,' in Cohen (ed.), *Nuclear Proliferation in South Asia: The Prospects for Arms Control* (Boulder: Westview Press, 1991).

moved into Tibet, annexing it in 1959. Conscious of India's geostrategic vulnerability, Nehru responded by improving New Delhi's security ties with Bhutan, Nepal and Sikkim - the Himalayan Kingdoms that were geographical buffers between India and Chinese Tibet - and by trying not to antagonise the Chinese government.²⁰ However, despite Nehru's efforts, relations between the two states deteriorated. In 1962 the two countries fought a bitter border war, leading to India's humiliation at the hands of the Chinese.

The war with China had serious repercussions. First, it confirmed India's fears about the PRC's aggressive foreign policy goals. India's main concern was that China had embarked on a campaign to marginalise India at the regional and global level.²¹ After the crisis had passed, R. K. Nehru, India's Foreign Minister, expressed these fears in a frank conversation with I. A. Benediktov, Soviet ambassador to India.²² He argued that the China was prepared to undermine India 'by any means, including military actions, which is dangerous for all peoples.'²³ These means included nuclear weapons as 'they [the Chinese], unlike the USSR and even the USA, do not understand the danger of nuclear war. The world is now divided not into East and West, but into two camps: one - for the continuation of the human species, the other (the Chinese sectarians) - against.'²⁴ These fears were particularly intense as, in 1960, Dr. Raghubira, a leading member of India's parliament and China expert,

²⁰ Nehru tried various tactics to try and pursue a peaceful and friendly relationship with China. He supported Peking's right of a permanent seat on the Security Council, gave the PRC speedy recognition; acquiesced to the annexation of Tibet, and concluded the Peaceful Agreement between India and China. Alam, pp. 11-13.

²¹ Recently released documents show that these suspicions were correct. China was trying to politically discredit India during the 1960s in order to fulfil its own ambitions as leader of the third world. During diplomatic meetings, China's political leaders accused India of provoking the border conflict, of 'speaking the language of America' and of 'working for and under the orders of the Americans.' The Chinese Premier, Zhou Enlai, believed that China's strategy of undermining India was working. After withdrawing from the disputed territory, he claimed that 'the countries of Asia and Africa' were now supporting Beijing rather than New Dehli, putting India in a 'very difficult position.' Archive of Foreign Policy of the Russian Federation, Moscow: *Fond 090*, op. 24, d. 6, p. 80, ll. 197-203. Record of Conversation (from East German Archives) between Chinese Premier Zhou Enlai and Mongolian leader J. Zedenbal, Beijing, 26 December 1962. Document located by J. Hershberg, June 1996. Translated by K. Weathersby. Obtained from the Woodrow Wilson International Center for Scholars Website: Cold War International History Project (CWIHP), 'New East-Bloc Documents on the Sino-Indian Conflict, 1959 and 1962.' (<http://cwihip.si.edu>).

²² Archive of Foreign Policy of the Russian Federation, Moscow: *Fond 090*, op. 24, d. 6, p. 80, ll. 134-139. Excerpt from an entry in Benediktov's diary, describing the conversation with R. K. Nehru, Soviet Embassy, New Delhi, 2 November 1962. Document located June 1996. (CWIHP), 'New East-Bloc Documents on the Sino-Indian Conflict, 1959 and 1962.' (<http://cwihip.si.edu>).

²³ Ibid.

²⁴ Ibid.

had told the Lok Sabha (the Lower House), that China was only a matter of weeks away from testing a nuclear weapon.²⁵

Second, the war with China exposed India's lack of reliable, powerful allies. During the Sino-Indian border conflict, the United States had responded too late to India's request for help, undermining Nehru's faith in U.S. intervention in the event of a future crisis.²⁶ The Soviet Union's response had also been troubling. Whilst claiming to support India during the war, the official Soviet newspaper, *Pravda*, published a front-page article, on 25 October 1962, rejecting the Soviet Union's pro-Indian stance.²⁷ The article shocked the Indian government, particularly as New Delhi's political leaders were aware that it had been approved by the Central Committee of the Communist Party of the Soviet Union (CPSU). Nehru declared that he was 'pained' by the article, and even though *Pravda* published a new lead article retracting its earlier comments, the damage had been done.²⁸ Events in December confirmed India's suspicions of Moscow's two-faced policy, as the CPSU ordered the immediate withdrawal of pro-Indian materials relating to the border dispute.²⁹ This left New Delhi with the impression that, despite indications of a rift between Moscow and Beijing, the Soviet Union would not intervene on India's behalf in the event of a future conflict with China.

3. Towards self-reliance

In response to this situation, Nehru decided that India's conventional capabilities would have to be improved. New Delhi's defence establishment was therefore drastically overhauled in order to redress the conventional military balance of

²⁵ Alam, p. 13.

²⁶ Neil Joeck, *Maintaining Nuclear Stability in South Asia*. Adelphi Paper No. 312 (London: IISS, 1997), p. 30.

Apparently, India's military humiliation in 1962 left a deep psychological scar, leading prominent strategic thinkers in India to believe that India should never again be caught unprepared to meet an obvious Chinese threat. Later, this reinforced arguments that India should develop nuclear weapons. Australian Archives, Canberra: Series No. A1838/2, Item No. 919/12/9 Part 1. *Confidential Memorandum #187/65* from the Australian Embassy, Washington, DC, to the DEA, Canberra, 8 February 1965. Requested 22 December 1997.

²⁷ *Pravda*, 25 October 1962. Cited in M. Y. Prozumenschikov, 'The Sino-Indian Conflict, the Cuban Missile Crisis, and the Sino-Soviet Split, October 1962: New Evidence from the Russian Archives.' CWIHP (<http://cwihip.si.edu>).

²⁸ *Pravda*, 5 November 1962. Ibid.

²⁹ Center for the Preservation of Contemporary Documentation, Moscow: *f.5, op.49, d. 536, 1. 58*. Record of Conversation between I. Cherniakov, Head of the Press Department, USSR, and I. Dzhein, Press Attache of the Indian Embassy in Moscow. CWIHP (<http://cwihip.si.edu>).

power with China. To achieve this, India sought military aid from the Soviet Union and the United States, and succeeded in obtaining \$275 to \$350 million in Soviet assistance,³⁰ and \$125 million in U.S. assistance over a five-year period.³¹ Within two years, armed forces manpower more than doubled from 400,000 to 860,000.³² Special mountain divisions were set up, trained for combat in the most likely area of confrontation, and major improvements were made in equipment, communications, and logistics.³³ At the same time, India's political leaders also took the nuclear threat from China very seriously, as reports outlining the advanced nature of the Chinese nuclear programme reached New Delhi.³⁴ Despite the display of U.S. ambivalence during the Sino-Indian border war, Nehru put pressure on the United States to provide India with a nuclear umbrella.³⁵ However, Nehru was given no reason to believe that this would be forthcoming. U.S. commitment seemed to be limited to financial assistance only. This explains the Indian Prime Minister's reluctant recognition of India's need for an indigenous nuclear capability, and suggests that even before China declared its nuclear capability to the world in 1964, the nuclear option was under consideration.

Part II: The nuclear option develops, 1964-1979.

The military dimension of India's nuclear programme grew in stops and starts after Nehru's death in 1964. Heightened threat perceptions, provoked by: the Chinese nuclear test in October 1964; exposure to U.S. intelligence reports of China's rapidly developing nuclear capability and delivery systems; the

³⁰ This deal was discovered by the U.S. government in February 1964. As part of the deal, the Soviet Union agreed to supply India with MIG-21s and cooperated in the construction of air-to-air missiles in Hyderabad. U.S. NSA, Washington: *Secret U.S. DOS cable #3243* from the U.S. Embassy, New Delhi to the Secretary of State, Washington, DC, 20 February 1964. Declassified 9 May 1995.

³¹ *Ibid.* Certain elements within the U.S. government were keen to take advantage of the situation developing in South Asia. Chester Bowles, in particular, believed that Washington could use New Delhi as a non-nuclear military-political balance against China, enabling the U.S. to 'contain Chinese aggression' without having to resort to U.S. 'nuclear attacks on Chinese cities.' He therefore recommended that the U.S. should increase its supply of aid to India and offer security assurances to New Delhi, including a nuclear umbrella. However, the government's hands were tied due to the opposition of Congress and budgetary constraints. U.S. NSA, Washington: *Secret White House Memorandum # 2318* from Chester Bowles to the U.S. President, 4 May 1963. Declassified 28 April 1995.

³² Richard K. Betts, 'Incentives for Nuclear Weapons: India, Pakistan, Iran,' *Asian Survey* 11 (November) 1979, p. 1056.

³³ *Ibid.*

³⁴ Alam, p. 17.

³⁵ *Ibid.*

deterioration of relations with Pakistan; the failure to secure a nuclear guarantee from the United States and the UK; and internal insurgency and domestic instability, all contributed to India's desire to develop an indigenous nuclear capability.³⁶ In addition, India's desire to regain some of the ground lost to China in its battle for leadership of the NAM, and its desire to establish itself as a great power on the international stage, increased proliferation pressures. If India could prove itself capable of conducting a nuclear explosion, India would acquire the international prestige that it coveted and which the NWS enjoyed.

However, at the same time, India's nuclear development was hindered by serious constraints. On a domestic level, New Delhi's nuclear programme was subject to delays and U-turns due to the reservations of certain key decisionmakers and a series of economic and political crises. On the international level, India was under severe pressure from the United States and the Soviet Union not to develop nuclear weapons, especially during negotiations over the NPT and after India's underground test in 1974. As a result, India's nuclear behaviour appears inconsistent during this period, although enough momentum existed to carry the programme through the troughs.

1. The Lop Nor test.

After Nehru's death, Baladur Shastri took over the post as Prime Minister, and continued to stress India's official opposition to nuclear weapons and its belief in universal nuclear disarmament. However, this official position shifted after the Chinese nuclear test at Lop Nor in October 1964. In a speech in the Lok Sabha in November 1964, Shastri admitted that, although India would continue to take a moral stand against nuclear weapons, he could no longer rule out the option of developing them in the future in the interests of national security. He stated that India would not respond to China's test by developing nuclear weapons, but

³⁶ Evidence proves that Nehru was not convinced that the United States would come to India's assistance in the event of a nuclear confrontation with China. He was sure that, even if India gave up its policy of non-alignment, the United States would never risk a Russian nuclear attack to defend India. Consequently, India 'must therefore be prepared to defend itself.' Australian Archives, Canberra: Series No. A1838/2, Item No. 919/12/9 Part 1. *Restricted Memorandum #1375/64* from the Australian Embassy, Washington, DC, to the Australian DEA, Canberra, 2 November 1964. Requested 22 December 1997.

added that 'I do not say that the present policy is rigid and can never change. An individual may have a policy and a conviction for which he can live or die, but we cannot take this attitude in the nuclear field. Here the situation changes constantly and we have to adapt our policy to these changes. If some amendment is needed to what we have said today, we shall make it...' ³⁷ Although this does not signify a major change in New Delhi's attitude, as the previous discussion of Nehru's nuclear policy indicates, it does represent a significant development in India's official stance on the nuclear issue. This is one of the first public statements to explicitly break with India's traditional peaceful rhetoric. ³⁸

2. The first PNE decision

Two important decisions were taken after the Lop Nor test. First, a decision was taken to begin preparations to carry out a PNE. The exact date that this decision was taken is unknown, but it is possible that it was taken after U.S. intelligence regarding the sophisticated nature of China's nuclear programme and delivery capabilities was received in New Delhi. ³⁹ Again, Bhabha appears to have played a key role in this decisionmaking process. He provided cost estimates for the development of an indigenous nuclear capability, arguing that an arsenal of 50 atomic bombs would cost less than \$21 million. These figures were circulated, and used by the pro-bomb members of the Congress Party to put pressure on

³⁷ Lal Baladur Shastri, *Lok Sabha Debates*, 24 November 1964. Shastri made similar remarks in the Rajya Sabha (upper house), stating that the China threat was not too intense due to its lack of delivery capability but that in the event that China did decide to develop a sophisticated delivery system 'we will certainly consider as to what we have to do because I would like to make it quite clear that the integrity and sovereignty of the country and its preservation are utmost in our minds.' Lal Baladur Shastri, *Rajya Sabha Debates*, 16 November 1965.

³⁸ The significance of this comment was noted in Washington, where the implications of Shastri's statement were considered by the press. Howard Simons, 'India Raises Possibility of Joining Nuclear Club.' *Washington Post*, 17 November 1965.

³⁹ In its attempts to win over the new Indian Prime Minister, Washington agreed to share its intelligence findings with Shastri. A DOD report on China's nuclear weapons programme, produced in December 1964, expressed surprise and concern over the sophistication of the device tested at Lop Nor. The report claimed that China had two jet medium bombers (capable of delivering a 10,000 pound payload to a radius of 1,550 miles or a 3,300 pound payload to a radius of 1,750 miles) and about 10 b-29 type propeller driven planes (capable of carrying 20,000-pound payloads to ranges to 1,600 to 1,800 miles). It also highlighted China's ballistic missile capability, revealing that the Chinese were working on a missile capable of carrying a 2,200 pound warhead to a range of 1020 miles, which would be ready for deployment in the late 1960s. In addition, the report indicates that recent photography had shown that the Chinese had constructed a missile-launching submarine that could fire three ballistic missiles to a range of 350 nautical miles. This information would have had a devastating impact on New Delhi's decisionmakers. U.S. NSA, Washington, DC: *Top secret U.S. DOD Memorandum #1898* 3 December 1964. Declassified 1 September 1995. This followed earlier U.S. estimates that China would have the capability to target India with nuclear-tipped missiles within four to seven years. Australian Archives, Canberra: Series No. A1838/2, Item No. 919/12/9 Part 1. *Secret Inward Savingram #38122* from the Australian DEA to the AHC, New Delhi, 13 November 1964. Requested 22 December 1997.

Shastri to give the go-ahead for a PNE. The fact that Bhabha based these estimates purely on the cost of the weapons and excluded the cost of constructing nuclear reactors, separation plants, and the costs of diverting nuclear scientists from development projects appears to have been overlooked.⁴⁰

Second, Shastri began to increase pressure on the nuclear powers to provide India with a nuclear guarantee. Shastri first raised the subject of a nuclear guarantee with British Prime Minister, Harold Wilson, in December 1964, without informing his cabinet or foreign office.⁴¹ When it became clear that this would not be forthcoming, he turned to both the United States and the Soviet Union for help, hoping that if a joint guarantee was provided he could avoid the awkward situation of undermining India's non-aligned status.⁴² However, this approach also failed, and Shastri was forced to consider the possibility of obtaining a bilateral security agreement with either the United States or the Soviet Union.⁴³ Even this strategy proved to be riddled with problems. The Soviet Union was not prepared to offer India a nuclear guarantee for fear that it would lead to a nuclear confrontation with China, and urged India to develop its own bomb.⁴⁴ In addition, Washington was convinced by this stage that India had taken a decision to go nuclear, and this caused serious problems in negotiations.⁴⁵ The United States was adamant that India should sign a nonproliferation agreement, but was unable to offer incentives to persuade New

⁴⁰ Mitchell Reiss, *Without the Bomb: The Politics of Nuclear Nonproliferation* (New York: Columbia University Press, 1988), p. 214; Sagan (1996-97), pp. 16-17; Frank E. Couper, 'Indian Party Conflict on the Issue of Atomic Weapons,' *Journal of Developing Areas* 3 (January) 1969, pp. 192-193.

⁴¹ A. G. Noorani, 'India's Quest for a Nuclear Guarantee,' *Asian Survey* 5 (July) 1967, pp. 490-502.

⁴² *Ibid.*, p. 502; Reiss (1988), p. 222.

⁴³ Ashok Kapur, 'Nuclear Development of India and Pakistan,' in Jorn Gjelstad and Olav Njolstad (eds.), *Nuclear Rivalry and International Order* (Oslo: SIPRI, 1996), p. 146.

⁴⁴ Australian Archives, Canberra: Series No. A1838/2, Item No. 919/12/9 Part 1. *Inward Cablegram #46685* from the Australian Embassy, Washington, DC, to the DEA, Canberra, 19 October 1965. Requested 22 December 1997.

⁴⁵ An unidentified intelligence source alerted Washington to the likelihood that India was already at work on developing a nuclear capability. U.S. NSA, Washington, DC: *Secret DOS telegram #1032* from the U.S. Embassy, Paris to the U.S. Secretary of State, Washington, DC, 1 October 1965. Declassified 26 February 1993. The U.S. government raised this issue with the Soviet Union in a letter the following week, stressing the proliferation pressures that an Indian nuclear capability would create in South Asia, and urging the Soviets to push ahead with negotiations over the NPT. U.S. NSA, Washington DC: *Secret ACDA Memorandum #1804* from William C. Forster to the President, 7 October 1965. Declassified 14 June 1995. In addition, the U.S. representative, Chet Holifield, after a trip to India earlier in the year, reported that it was inevitable that India would develop a nuclear capability, and that this would have a profound impact on Pakistan. U.S. NSA, Washington DC: *Secret DOS telegram #1442* from the U.S. Embassy, Paris to the U.S. Secretary of State, Washington, DC, 16 October 1965. Declassified 26 February 1993.

Delhi to take this course of action because Congress was not prepared to agree to a nuclear guarantee, and because the Pakistani Foreign Minister had made it clear that such an arrangement would not be acceptable to Pakistan.⁴⁶

This dual approach to nuclear development may appear inconsistent, but it makes sense if it is viewed as long and short-term strategies. Shastri was aware that it would take many years for India to develop the necessary delivery capability to enable strategic targets in China to be brought within range. The decision to go ahead with the PNE should therefore be seen as part of a long-term strategy to develop a credible nuclear deterrent. At the same time, attempts to secure a nuclear umbrella should be viewed as a short-term strategy to tide India over until its ultimate goal of a nuclear capability could be achieved.⁴⁷ In addition, Shastri continued to stress the importance of India's conventional capabilities, and was concerned that the debate over the nuclear issue should not detract attention from India's need to maintain strong conventional power.⁴⁸ The large degree of restraint that he showed during this period appears less surprising when viewed from this perspective, as a crash programme was neither feasible nor desirable.

3. Indira Gandhi's 'no bomb policy,' 1966-71.

Attempts to secure a nuclear guarantee from the United States continued after Shastri and Bhabha died in 1966. At this point India's priorities appear to have altered temporarily as the new Prime Minister, Indira Gandhi, struggled to deal

⁴⁶U.S. NSA, Washington, DC: *Secret White House letter # 2319* from R.W. Kromer to Ambassador Bowles, 10 March 1966. Declassified 12 April 1995. Australian Archives, Canberra: Series No. A1838/2, Item No. 919/12/9 Part 1. *Secret Memorandum #791* from the AHC, Karachi, to the DEA, Canberra, 15 June 1965. Requested 22 December 1997.

⁴⁷ During this period, the Shastri administration dropped some strong hints about the possibility of developing an independent nuclear capability for India. This was probably intended to put pressure on the U.S. government to provide New Delhi with a nuclear umbrella. This appears to have been the strategy lying behind the high-profile official inauguration of the Plutonium plant at Trombay in February 1965. J. P. Baxter, the Australian representative at the ceremony commented that he 'came away from the visit with the feeling that it had been planned from the start as a demonstration of Indian capacity to produce nuclear weapons, and of her firm intention to do so...this feeling was shared by most of the visitors, who, being in the main technical people, could hardly miss the point. I am sure they were not intended to miss it.' Australian Archives, Canberra: Series No. A1838/2, Item No. 919/12/9 Part 1. *Secret Memorandum #144* from J. P. Baxter to the Hon. Paul Hasluck, Minister for External Affairs, Parliament House, Canberra, 17 February 1965.

⁴⁸ Shastri made this point during the Rajya Sabha debate over the nuclear issue in November 1965, declaring that 'conventional weapons are more important for us at the present moment than the atomic weapons or nuclear weapons.' Lal Baladur Shastri, *Rajya Sabha Debates*, 16 November 1965. This assessment of the conventional threat from China echoes that of R.K. Nehru, who claimed that 'the only threat is from China's conventional forces and this will continue to be the main threat.' R.K. Nehru, 'Control and Disarm,' *Seminar* (28 January) 1965, p. 40.

with the crisis generated by poor harvests.⁴⁹ Plans for the PNE were therefore overturned by Indira Gandhi and the new chairman of the AEC, Victor Sarabhai. It is difficult to know who was the main driving force behind this decision, but reports indicate that: Sarabhai had a fundamental distaste for nuclear weapons; Indira Gandhi was more concerned with consolidating her power and seeking U.S. aid to alleviate the food shortages; and there was a general feeling amongst New Delhi's decisionmaking elite that China would not launch a nuclear attack against India.⁵⁰ During her visit to Washington in March 1966, Indira Gandhi used promises of a 'no bomb policy' to persuade the U.S. to provide financial assistance for India and to negotiate security assurances against the nuclear threat from China.⁵¹ Primary evidence indicates that the United States was prepared to help with the former request, but that its hands were tied with regard to the latter. Washington's strategy was to try to convince New Delhi that the costs and difficulties involved in developing a credible indigenous deterrent against China were prohibitive, given the distances of the major Chinese cities from India. In addition, the U.S. tried to persuade India that its interests would be served if it signed the NPT in return for vague security guarantees and the promise of shared U.S. intelligence over China's nuclear programme.⁵²

However, these tactics did not reassure decisionmakers in New Delhi, and after the food crisis had past, the period from 1967 to 1971 was characterised by growing mutual irritation in Indo-American relations against a backdrop of deteriorating relations with China, and a third Chinese nuclear explosion.⁵³ Indira Gandhi continued to reject the possibility that India might

⁴⁹ The crucial role played by Bhabha in India's early nuclear development was internationally recognised. Commenting on his death, an article in the *Economist* posed the question: what will Mrs Gandhi's government do 'now that Dr Bhabha is not there to argue his case with an intoxicating mixture of physics logic and Parsee eloquence? For without his personal influence, India's nuclear weapon programme would never even have been started.' 'End of a Dream?' *Economist*, (29 January) 1966.

⁵⁰ Ramanna, p. 76; Australian Archives, Canberra: Series No. A1838/2, Item No. 919/12/9 Part 1. *Confidential Inward Cablegram #14135* from the AHC, New Delhi, to the DEA, Canberra, 23 March 1966. Requested 22 December 1997.

⁵¹ U.S. NSA, Washington, DC: *Top secret White House Memorandum #1708* from R. W. Kromer to the President, 18 March 1966. Declassified 4 August 1995.

⁵² U.S. NSA, Washington, DC: *Secret White House Memorandum #1710* 25 March 1966. Declassified 4 August 1995; *Secret ACDA Memorandum #1808* 2 June 1966. Declassified 23 August 1995; *Secret DOS Report* (number unknown) 3 June 1966. Declassified 8 December 1994.

⁵³ Chinese officers were accused of giving training to Pakistani forces during this period in both east and west Pakistan. India also accused China of having 'hypocritically and unscrupulously' gone back on the Bandung Declaration to which it had subscribed, and of embarking on a policy of interference on the Subcontinent. These tensions were exacerbated by

develop a nuclear capability,⁵⁴ but at the same time criticised the hypocritical attitude of the nuclear powers to nonproliferation. She was particularly annoyed that India had not been consulted over the drafts of the NPT by either the United States or the Soviet Union, and felt that India was being marginalised during negotiations.⁵⁵ Even Moraji Desai, the mild-mannered and pacifistic Deputy Prime Minister, expressed his disgust over the manner in which India was being bullied by the United States into making nonproliferation promises, without any tangible reward.⁵⁶ India was not satisfied with the vague security guarantees being offered as an incentive to join the NPT,⁵⁷ and by 1968 was left feeling humiliated and isolated due to the discriminatory nature of the treaty, which had departed from the original UN General Assembly Resolution of 19 November 1965.⁵⁸

4. War with Pakistan, 1971

India's international position deteriorated even further in 1971 following the war with Pakistan. The causes and consequences of this conflict are highly significant, providing an important insight into the roots of India's deep-seated insecurity. The problem began as a domestic political crisis in Pakistan, but spilt over into India. Trouble began after the Pakistani election in December 1970,

India's concerns that China was conducting a massive anti-Indian propaganda campaign in an attempt to capitalise on India's economic difficulties. Australian Archives, Canberra: Series No. 1838/2, Item No. 919/12/9 Part 1. *Confidential Inward Savingram #30282* from the AHC, New Delhi, to the Australian DEA, Canberra, 17 June 1966. Requested 22 December 1977.

⁵⁴ This was despite the fact that the unanimous feeling of the Congress Parliamentary Party Executive was that the government should develop India's nuclear capability to the point where, if necessary, nuclear weapons could be assembled at short notice. In other words, they were already urging a policy of recessed deterrence in response to the third Chinese nuclear test. Australian Archives, Canberra: Series No. 1838/2, Item No. 919/12/9 Part 1. *Restricted Inward Cablegram #23142* from the Australian DEA, Canberra, to the AHC, New Delhi, 11 May 1966. Requested 22 December 1997.

Indira Gandhi, on the other hand, did not think that possession of a nuclear option would make India stronger, or help in its defence, although she admitted that it would have prestige value. Australian Archives, Canberra: Series No. 1838/2, Item No. 919/12/9 Part 1. *Restricted Memorandum #828* from the AHC, New Delhi to the Australian DEA, Canberra, 1 June 1966. Requested 22 December 1997.

⁵⁵ U.S. NSA, Washington, DC: *Secret Telegram #3368* from Secretary Rusk at the UN mission in Geneva to the U.S. Embassy, New Delhi, 10 March 1967. Declassified 27 September 1994.

⁵⁶ U.S. NSA, Washington, DC: *Secret White House Memorandum #2320* from W.W. Rostow to the President, 11 September 1967. Declassified 13 April 1995.

⁵⁷ U.S. NSA, Washington, DC: *Secret NSC Memorandum #1537*. Report on the Forster Consultations on the Draft Resolution and the U.S. Declaration on Security Assurances for Non-nuclear Countries, 20 October, 1967. Declassified 30 March 1995. The report states that the U.S. is no longer confident that India will accept the vague security assurances being offered under the treaty due to the threat from the Chinese, but hopes that these assurances will 'suffice for others.'

⁵⁸ The original UN Resolution had emphasised the principles of equality and reciprocity between nuclear and non-nuclear weapon states. Reiss (1988); Sundarji, p. 174.

when Zulfikar Ali Bhutto's Pakistan People's Party won a decisive victory in West Pakistan, but failed to attract support in the East, which was dominated by the Awami League.⁵⁹ The Awami League claimed the right to create an independent state in the East, prompting a military crackdown by Bhutto's forces. As a result, up to 10 million Muslim refugees fled into West Bengal and India in March 1971, putting a huge strain on the social structures there.⁶⁰ Indira Gandhi's response to this crisis was to send Indian soldiers into East Pakistan to support the insurgents, causing Bhutto to launch pre-emptive air strikes against bases in western India.⁶¹ This was followed by a declaration of war by India, and the humiliation of Pakistan's forces by December 1971.

Perhaps the most significant development during this short but bitter war, was the intervention of the United States on Pakistan's behalf. Washington exerted immense diplomatic pressure on New Delhi to withdraw from East Pakistan during intense negotiations at the UN. When this failed, President Nixon resorted to military threats by sending the U.S. aircraft-carrier, *Enterprise* - which was assumed to be carrying nuclear weapons - into the Indian Ocean. This sent shock waves through New Delhi, as it came at a time when relations between the United States and China were improving, leading the Gandhi administration to believe that a Sino-U.S.-Pakistani axis was forming against India.⁶² This was all occurring against a background of increasing fear over the nuclear threat from China. In May 1970, reports had reached the Indian press that China had carried out a successful space launch, generating renewed pressure from the pro-bomb lobby to weaponise 'whatever the cost.'⁶³ In response, Indira Gandhi immediately sought a closer relationship with the Soviet Union, and as a result the Friendship Treaty was signed between the two states in August 1971.⁶⁴ However, this treaty did not provide India with an explicit

⁵⁹ Joeck, pp. 23-24.

⁶⁰ Ibid., p. 24.

⁶¹ Ibid.

⁶² Girilal Jain, 'India,' in Jozef Goldblat (ed.), *Non-proliferation: The Why and the Wherefore* (London: Taylor and Francis, 1985), p. 93.

⁶³ Peter Hazelhurst, 'Atom Bomb Urged for India,' *The Times*, 11 May 1970.

⁶⁴ Rodney W. Jones, 'India,' in Goldblat, *op. cit.*, p. 113.

nuclear guarantee. Consequently, Gandhi also gave the go-ahead for preparations to be made to conduct a PNE. This decision was taken some time between December 1971 and spring 1972.⁶⁵

5. The Pokhran Test, May 1974.

After the decision had been taken to make plans for the nuclear test, India's scientists began preparations. Apparently, the design of the explosive device had already been developed, but work was yet to commence on the production of the plutonium alloy, the trigger device and the associated electronic devices that were required for the explosion.⁶⁶ By 1973, all of the material problems had been tackled, and attentions turned to finding a site without underground water resources in a sparsely populated area.⁶⁷ Once a suitable location had been identified, Indira Gandhi selected a small group of scientists and government ministers to discuss the implications and the timing of the experiment. Present at this series of meetings were: P. N. Haskar, the former Principle Secretary to the Prime Minister; P. N. Dhar, the incumbent Principle Secretary; Dr. Nag Chaudhary, the Scientific Advisor to the Defence Minister; H. N. Sethna, the Chairman of the AEC; and Raja Ramanna, Director of the Atomic Energy Establishment (AEE).⁶⁸ This select group discussed the potential impact of the PNE on India's trading partners and on its international relations in general. But despite the reservations of Haskar and Dhar in this regard, the decision was taken to carry out the test as planned on 18 May 1974.

The timing of this test has provoked a great deal of controversy. The point that it coincided with an upturn in India's strategic situation has led to speculation over whether the primary driving force behind the decision lay at the domestic level.⁶⁹ This is possible, as India had been experiencing serious

⁶⁵ The exact date that the decision was taken is not known. Different accounts give different dates, but most place it within a six-month timeframe. Jain, p. 93; Ramanna, p. 88; Jones, p. 113; Raju G.C. Thomas, *Indian Security Policy* (Princeton, NJ: Princeton University Press, 1986), p. 45. In an interview shortly after the test was carried out, Jagjivan Ram, India's Defence Minister, claimed the decision to carry out the PNE was taken 'about three years ago.' *Times of India*, 20 May 1974.

⁶⁶ Ramanna, p. 88.

⁶⁷ *Ibid.*

⁶⁸ *Ibid.*, p. 89.

⁶⁹ Thomas, p. 46; Brahma Chellaney, 'India,' in Reiss and Litwak, *op. cit.*, p. 171.

internal problems since 1972, and these were escalating in the first half of 1974. Successive crop failures had led to serious food shortages, provoking violent strikes and riots in Gujarat and Bihar between January and April 1974.⁷⁰ By 5 May, these disturbances had spread to Delhi.⁷¹ In the ensuing conflict between the police and protesters, 60 people were injured and seven killed, and the army was put on stand-by.⁷² This all occurred against a backdrop of political intrigue, during which the integrity and credibility of the ruling Congress Party was called into question.⁷³ This situation must have been deeply unsettling for the ruling elite, and for Indira Gandhi in particular, and it is possible that, whether the decisionmakers were conscious of it or not, their decision to go ahead with the PNE was influenced to some extent by this internal chaos.⁷⁴

It is likely that the decision to conduct the PNE was also influenced by longer-term strategic factors. Irrespective of the recent improvement in regional relations in South Asia, India was still involved in a long process of adapting to international political developments.⁷⁵ Indira Gandhi was conscious that she could not rely on the Friendship Treaty with the Soviet Union to provide India with protection against a potential nuclear threat from China. She was also aware that China was working on its delivery capabilities, and that if India procrastinated for too long, the gap between China's and India's strategic capabilities would be impossible to close.⁷⁶ In addition to this direct military

⁷⁰ *Times of India*, 16 January 1974; *Times of India*, 12 March 1974; *Times of India*, 2 April 1974. Ramashray Roy, 'India 1972: Fissure in the Fortress,' *Asian Survey* 13 (February) 1973; Ramashray Roy, 'India 1973: A Year of Discontent,' *Asian Survey* 14 (February) 1974; Ram Joshi, 'India 1974: Growing Political Crisis,' *Asian Survey* 15 (February) 1975; G. Shah, 'The Upsurge in Gujarat,' *Economic and Political Weekly* 9 (August) 1974.

⁷¹ *Times of India*, 6 May 1974.

⁷² *Ibid.*

⁷³ There was a sense that the political system was on trial in early 1974 as various corruption scandals rocked the state and alienated the politically conscious section of the public. One journalist referred to this mood as a 'sense of despair' as the 'very legitimacy' of the political system was in doubt. *Times of India*, 2 April 1974.

⁷⁴ At the time, decisionmakers denied that the economic and political crisis facing the government had had any bearing on the decision to explode the device. In an interview with the *Times of India*, Sethna argued that the experiment had lacked any political motivation of any kind, and that it had taken place for purely scientific reasons. In fact, he declared that the decision had been left entirely up to him by the Gandhi administration. However, most reports contradict this version of events and it seems likely that Sethna was presenting a rather creative interpretation of the situation. *Times of India*, 21 May 1974.

⁷⁵ A peace agreement was signed between India, Pakistan and Bangladesh in April 1974. *Times of India*, 20 April 1974.

⁷⁶ It has been suggested that India's decision to go ahead with the PNE could have been provoked by rumours that Pakistan was working on a nuclear weapons programme. Sumit Ganguly, 'The Indian and Pakistani Nuclear Programs: A Race to Oblivion?' Unpublished paper, Department of Political Science, City University of New York, 1995. However, although it is now known that Bhutto took the decision to go nuclear in January 1972, there is no evidence to suggest that the Gandhi administration was aware of this at the time. In fact, most of the evidence suggests that India's nuclear decisionmakers only became convinced that Pakistan had embarked on a nuclear weapons programme in April 1979. It

threat, Indira Gandhi also had a score to settle with the international community. There was a widespread feeling that India had been the victim of atomic colonialism during the negotiations over the NPT, and it was probably felt that the demonstration of a nuclear capability would change international perceptions of India. Certainly, after the test had taken place, the press was keen to emphasise the positive impact that the PNE would have on India's reputation. In an article in the *Times of India* it was claimed that the nuclear test 'fits into the new image of tough determination.' It goes on to declare that 'from the viewpoint of restoring the country's sagging reputation abroad and failing morale at home, the test could not have come at a better time.'⁷⁷

6. Riding the storm, 1974-79.

India's nuclear programme suffered severe setbacks after the PNE in 1974, partly due to international restrictions imposed by the United States and Canada as punishment for India's nuclear activities, and partly due to the principled beliefs of the new Prime Minister, Moraji Desai, who was morally opposed to the development of a nuclear weapons capability under any circumstances.

India's nuclear decisionmakers had not anticipated the storm of protest that followed the explosion at Pokhran. The Canadians, in particular, were indignant that the plutonium for the test had come from Cirus, the 40 MW reactor supplied by them. They immediately put a stop to all nuclear cooperation with India. The U.S. government was also embarrassed by the fact that it had provided the heavy water used by Cirus, as this deal had been justified using promises that the material was intended for peaceful uses. As a result, all U.S. nuclear cooperation with India was also suspended. This left India in a difficult position. Its first response was to undertake an exercise in damage limitation. It was stressed that the test had not been politically motivated - it was an

has also been revealed that one of the major concerns of the select group chosen to deliberate over the timing and the implications of the PNE, was the possibility that the demonstration of India's nuclear capability would unleash proliferation pressures in Pakistan. This suggests that they had no knowledge of Bhutto's existing decision to go nuclear. Ramanna, p. 88; K. Subrahmanyam, 'Do We Really Have a Choice?' *World Focus* 2 (June) 1981, p. 3; Girilalal Jain, 'The Imperative of Staying Ahead.' *World Focus* 2 (June) 1981.

⁷⁷ *Times of India*, 22 May 1974.

experiment carried out by India's scientists for entirely peaceful purposes. However, nobody was convinced, and the termination of nuclear assistance caused a serious setback to the Indian nuclear programme.⁷⁸ As a result of this setback, it was decided that India's nuclear industry would have to become more self-reliant in order to ensure the future availability of unsafeguarded fissile material. A decision was therefore taken to build a reactor to reduce the dependence on Cirus, and work started on the construction of Dhruva on 30 October 1975.⁷⁹

The election of the Janata Party in March 1977, with Moraraji Desai as its leader, also caused India's nuclear development to stall. During the 1960s, Desai had been one of the most determined opponents in the debate over whether India should acquire a nuclear weapons capability - regarding such a step as an immoral negation of the country's principles.⁸⁰ As soon as he assumed office he undertook a review of Indira Gandhi's nuclear policy, intent on a change of course. In statements to parliament and press he announced that the previous government had been wrong to conduct the PNE, and promised that no tests would be carried out under his premiership and that India would not develop nuclear weapons.⁸¹ It appears that Desai's own beliefs were the main driving force behind the new administration's decisions. This was dramatically demonstrated at the UN in 1978, when Desai declared India's nuclear abstinence against the advice of the President, and without first going through the process of consultation with his cabinet.⁸² This unilateral decision was greeted with horror by political commentators, scientists and policymakers in New Delhi, who were painfully aware that France had supplied Pakistan with a

⁷⁸ Dr. Srinivasan, former AEC Chairman, admitted in an interview in July 1995 that international reactions to the PNE caused 'a serious setback.' He added that 'it is difficult to quantify the years...but efforts were taken to overcome the consequences. Fortunately, India's industrial base is sufficiently diversified to be able to cope with the effects of the embargo.' Quoted in Sidhu (1997), p. 280.

⁷⁹ Dhruva is a 100 MW indigenous high flux nuclear reactor capable of producing about nine to ten kg of weapon grade plutonium a year. Ibid.

⁸⁰ U.S. NSA, Washington, DC: *Confidential ACDA report #2018* entitled 'Moraji Ranchhodji Desai.' No date. Declassified 14 August 1995.

⁸¹ However, despite his moral abhorrence of nuclear weapons, he announced that India would continue to oppose the NPT, 'what ever the consequences' until the nuclear powers have taken definite steps towards nuclear arms control. Alam, p. 33.

⁸² Subrahmanyam, p. 4.

reprocessing plant in 1976, and were increasingly wary of the strategic partnership developing between Pakistan and the United States.⁸³ As domestic threat perceptions were escalating, Desai appeared to be pursuing his own personal crusade, which, in the eyes of many, was undermining the security of the state.⁸⁴

Part III: On the brink of weaponisation, 1980-1998.

Since 1980, India has continued to develop its nuclear option and appears to have been on the brink of weaponising on at least four occasions: in 1983-4, 1987, 1990 and 1998. On the first three occasions, India's nuclear decisionmakers eventually decided to maintain the option policy, but as the threats increased, New Delhi used public statements to signal its advanced nuclear capabilities to Islamabad. The following discussion shows that a combination of underlying tensions and direct threats can be identified as the main factors shaping India's nuclear behaviour in the 1980s. First, India was becoming less confident that it could rely on the Friendship Treaty with the Soviet Union to deter or ameliorate potential threats. This became increasingly significant after the Soviet invasion of Afghanistan in 1979, and Washington's decision to strengthen its ties with Islamabad. Second, internal insurgency in Kashmir, Punjab and Assam was escalating, undermining the legitimacy of the state and threatening the survival of the Gandhi administrations. This was causing relations with Pakistan, which were already difficult, to deteriorate. Lastly, these underlying pressures were occurring at a time when India was increasingly aware of China's developing delivery capabilities, and at a time when reports from the United States provided New Delhi with the first reliable evidence that Islamabad had embarked on a nuclear weapons programme.

⁸³ Ibid.; India's sensitivity to news of the Franco-Pakistani nuclear cooperation is outlined in a memorandum recording a meeting between the U.S. President and various representatives from the NSC in September 1976. Discussions focused on whether the United States could go ahead with the agreement to supply Pakistan with a number of A-7 aircraft in the wake of international, and particularly Indian, concern over Pakistan's nuclear intentions. U.S. NSA, Washington, DC: *Confidential White House Memorandum #3556* 20 September 1976. Declassified 23 May 1996.

⁸⁴ Subrahmanyam, p. 4.

1. Confirmation of Pakistan's nuclear activities, 1979-80.

Desai's government fell in mid-1979. Under the interim Charan Singh government, Desai's approach was abandoned in favour of a more hard line nuclear policy. This was primarily a response to the disclosures of Pakistan's covert activities to build a uranium enrichment plant and reprocessing plant. Concern over Pakistan's nuclear activities had been escalating in New Delhi since April 1979, when the United States invoked the Symington Amendment and claimed that it would suspend all aid to Pakistan.⁸⁵ Under the terms of this legislation, no aid could be given to a country engaged in nuclear weapons production. The point that Washington was generally sympathetic to Pakistan, and yet was so concerned over Islamabad's nuclear intentions that it appeared to be prepared to risk souring relations with its main strategic partner in South Asia by announcing its intention to cut all assistance, was not lost on India's decisionmaking elite. Following Washington's decision, Atal Bihari Vajpayee, the Janata Foreign Minister, announced in the Lok Sabha that it was possible that Islamabad was making substantial progress towards acquiring a nuclear explosive capability.⁸⁶ Subsequently, the Lok Dal Prime Minister, Charan Singh, and his Defence Minister, C. Subramaniam, confirmed these suspicions in parliament and hinted that India might face a decision to go nuclear before long, in response to Pakistan's activities.⁸⁷ Singh was even prepared to make a high profile public statement about the perceived threat from Pakistan. At his independence day speech on 15 August 1979, he announced that if Pakistan went nuclear, India would review its nuclear policy.⁸⁸ From this point onwards, India's nuclear decisionmaking was strongly influenced by the Pakistani factor.

News that Pakistan's nuclear programme was not entirely peaceful did not come as a great surprise to many of India's political commentators. Even so, the first public acknowledgement by the Indian government that it may soon face a nuclear-armed adversary stimulated another debate over the nuclear

⁸⁵ Ibid., p. 3.

⁸⁶ Alam, pp. 34-35.

⁸⁷ Ibid., p. 35.

⁸⁸ Ibid.

issue.⁸⁹ Calls for India to pursue a nuclear capability intensified, as influential journalists, academics, military leaders and politicians - across the party spectrum - expressed their fears. The Director of the Institute of Defence and Security Analysis (IDSA), K. Subrahmanyam, claimed that 'those who are still doubtful whether Pakistan is developing nuclear weapons fall in the category of those who, taken to the zoo and shown the giraffe, shake their heads and say that they do not believe such an animal exists.'⁹⁰ He, and other influential critics of the previous government's policy, stressed that India's conventional superiority over Pakistan would soon be 'nullified' by Pakistan's nuclear capability, leaving India no choice but to pursue a nuclear option. His article also indicates that India had gained access to U.S. intelligence reports from March 1981, which suggested that Pakistan would be in a position to produce nuclear weapons in two to five years.⁹¹ Armed with this information, the pro-bomb lobby's demands began to look more reasonable and may have played a role in Indira Gandhi's decision to resume nuclear testing.⁹²

2. Test preparations and the missile programme.

The election in January 1980 returned Indira Gandhi and the Congress Party to power with a large majority. Her second premiership should be seen in the context of two major events from the previous year: the widespread reports about Pakistan's nuclear weapons programme; and the Soviet invasion of Afghanistan in December 1979. These two developments became inextricably linked during her term in office as she observed Pakistan's efforts to forge a security relationship with the United States and witnessed the military build-up in

⁸⁹ The main arguments for and against India developing a nuclear capability are outlined in a special edition of *World Focus* entitled: 'Must India Have the Bomb: A Debate,' *World Focus* 2 (June) 1981

⁹⁰ Subrahmanyam, p. 5.

⁹¹ Apparently, this report was based on information provided by Lester Wolff, the U.S. Congressman, who visited Pakistan in 1980 and described the centrifuge facility at Kahuta as a bomb factory. *Ibid.*

⁹² Indira Gandhi's decision may also have been influenced by the arguments put forward in *Nuclear Weapons in a Third World Context* - a 1981 study of nuclear deterrence in India's strategic situation. This compilation was commissioned by the government, and included contributions by several military and civilian analysts on the subject of whether conventional means alone would be sufficient to deter a nuclear-armed aggressor state. The conclusions reached by most of the contributors indicated that only nuclear weapons would suffice to deter the threat posed by both China and Pakistan. K.S. Sundarji (ed.), *Nuclear Weapons in a Third World Context* (Mhow, India: College of Combat, 1981).

the Indian Ocean by the superpowers. Of particular concern to decisionmakers in New Delhi was the news that the United States had agreed to provide Pakistan with a 3.2 billion dollar aid package, which included the purchase of 40 advanced F-16 aircraft.⁹³ The Indira Gandhi administration was deeply suspicious over Islamabad's intentions, believing that the F-16s could potentially provide Pakistan with a delivery capability.⁹⁴ Moreover, as far as India's decisionmakers were concerned, the strategic partnership between Pakistan and the United States was a sign that Washington was reconciled to Pakistan producing a nuclear arsenal as long as it remained 'in the hands of a friendly government.'⁹⁵ This situation was deeply worrying for the new administration as it had only a stalled nuclear programme and a vague friendship treaty with the Soviet Union with which to counter the growing threat.

This helps explain the Indian government's decision to prepare the ground for two additional nuclear tests, probably with fusion weapons, sometime in early 1981. The exact date of the decision is unknown, due to the atomic establishment's practice of never putting anything on paper, but it has been suggested that it probably coincided with the appointment of Raja Ramanna as head of research and development at the Department of Atomic Energy (DAE).⁹⁶ Apparently, the holes for the new tests - which were much deeper to take the bigger bomb - were started and completed under difficult circumstances. Little else is known because, as with the preparations for the 1974 PNE, it was decided that it would be in the national interest to keep the programme secret. However, unconfirmed U.S. intelligence reports, though vague, indicate that the tests may have been planned to take place in May 1982, as activity was recorded at the Pokhran site for twelve months leading up to this date.⁹⁷ According to the intelligence sources, an area had been cordoned off between

⁹³ R. Rama Rao, 'Let Us Start Building An Arsenal.' *World Focus* 2 (June) 1981, p. 25.

⁹⁴ Alam, p. 37.

⁹⁵ Defense Secretary, Caspar Weinberger, remarked in the *Sunday Times* that he saw the development of a Pakistani nuclear arsenal as inevitable, and that attention should be focusing not on whether or not Islamabad will go nuclear, but on making sure that 'whenever the bomb becomes available, it should remain in the hands of a friendly government.' *Sunday Times*, 26 April 1981.

⁹⁶ Sidhu (1997), pp. 280-281.

⁹⁷ U.S. NSA, Washington, DC: *Secret Cable #9252* from the U.S. Embassy, India, to the DOS, 12 May 1982. Declassified 12 April 1989.

the earlier test site of Malka and Knetolai, and at night, lights could be seen from the site, accompanied by drilling noises.⁹⁸ Backing up this evidence, was the report by a nearby village headman, who claimed that the military authorities had approached him to discuss the possibility of evacuation.⁹⁹ There is a possibility that, on receiving these reports, the U.S. government used threats or incentives to persuade Indira Gandhi not to go ahead with these tests, although there are no documents to reinforce this conjecture.

India's renewed determination to develop a nuclear weapons capability can also be seen in the decision to launch the missile programme in 1983-84. Again, the precise date that this decision was taken is not known, but it is thought that it occurred after the appointment of R. Venkataraman as Minister of Defence.¹⁰⁰ The programme's goal was to develop long range, nuclear capable missiles, which would provide India with the capacity to strike China and Pakistan. This represents an important phase in the development of New Delhi's nuclear doctrine, as it shows that India's nuclear decisionmakers were putting together all the crucial components of a nuclear 'weapon option.' Once a viable delivery system could be demonstrated, both Pakistan and China would be alerted to the possibility that India could choose to weaponise at short notice, and could target strategic locations in both countries if the need arose. This would lend an important degree of credibility to India's weapon programme, creating a deterrent effect without the need to openly weaponise.¹⁰¹ This was

⁹⁸ Ibid.

⁹⁹ Ibid.

¹⁰⁰ This date is speculative, but on the basis that the Prithvi and Agni missiles were first tested in 1988 and 1989 respectively, it has been suggested that the decision to begin the missile programme was taken sometime between 1983-84, given the gestation period of about five years for missile programmes of this kind. This is pointed out by Sidhu (1997), p. 58.

¹⁰¹ The importance of developing a credible deterrent had been pointed out by General A. S. Vohra and Subrahmanyam in 1981. Vohra stressed that India desperately needed to develop its delivery systems in order to strike targets deep within China. He pointed out that India's nuclear capability would not function as a deterrent if high value targets in China lay outside the range of India's delivery vehicles because this would make retaliation incredible and as a result would create 'an environment of instability.' By 1981-82, India had acquired aircraft that could bring much of southern China within India's reach, but Subrahmanyam believed that India would need to be able to target bases in the north to ensure strategic stability. Sundarji, pp. 40-53. It is possible that these arguments were one of the important driving forces behind New Delhi's decision to develop the Agni intermediate range ballistic missile (IRBM).

dubbed the doctrine of 'recessed deterrence,' and was, with a few temporary disruptions, the cornerstone of India's nuclear policy for the next 15 years.¹⁰²

3. The decision to weaponise, 1983-4.

India's doctrine of recessed deterrence was reviewed periodically during the 1980s, although on each occasion it was eventually re-endorsed. The first time India's decisionmakers grappled with the question of whether the time had come to go overtly nuclear in order to deal with the Pakistani threat occurred during the final year of Indira Gandhi's life. The subject of Pakistan's nuclear intentions was a major concern of her second administration - to the extent that a pre-emptive strike on Pakistan's nuclear facilities was given serious consideration, although this was always publicly denied.¹⁰³ In the event, it was decided that such action would be detrimental to India's security, as it would probably lead to a retaliatory strike by Pakistan and then to all out war.¹⁰⁴ However, Indira Gandhi was determined to demonstrate to the world that India's security concerns regarding Pakistan and its strategic partnership with the United States, were serious. She did this in her speeches, referring to the threat of war from Pakistan and the insecurity provoked by Washington's supply of sophisticated weapons to Islamabad.¹⁰⁵ She also stressed the point that India was trying to deal with this overwhelming strategic threat at a time when the country was unsure about the reliability of its treaty with the Soviet Union, and when the country was plagued

¹⁰² This doctrine has also been referred to as 'non-weaponised deterrence' and 'existential deterrence.' G. Perkovich, 'A Nuclear Third Way in South Asia,' *Foreign Policy* (Summer) 1993; Devin Hagerty, 'Nuclear Deterrence in South Asia: The 1990 Indo-Pakistani Crisis,' *International Security* (Winter) 1995/6; McGeorge Bundy, 'Existential Deterrence and its Consequences,' in D. MacLean (ed.), *The Security Gamble: Deterrence Dilemmas in the Nuclear Age* (Totowa, NJ: Rowman and Allanheld, 1984). They all refer to a country's capability to build and deliver nuclear weapons without exercising this capability. Air Commodore Jasjit Singh defined it thus: 'countries like Canada, Sweden, Japan, Germany, Switzerland, Belgium and India have well developed nuclear programmes for peaceful purposes. They do not have a weapons programme. But the technological base is more than adequate to achieve weaponisation at short notice. On the other hand, they may never cross the threshold to weaponisation. This level of capability provides these states with a recessed deterrent - which need not surface at all, but the capability of which will have to be taken into account by any power contemplating using the threat of nuclear coercion or weapons.' This definition rather plays down India's actual capability. Jasjit Singh, 'Prospects for Nuclear Proliferation,' in S. Sur (ed.), *Nuclear Deterrence: Problems and Perspectives in the 1990s* (New York: UNIDIR, 1993), p. 59.

¹⁰³ Sidhu, p. 121.

¹⁰⁴ Ibid.

¹⁰⁵ The *New York Times*, 28 April 1981; *The Washington Post*, 20 December 1982. Indira Gandhi also made her point directly to the United States during her state visit in 1982. U.S. NSA, Washington, DC: *Confidential cable #1981* from the U.S. Department of State to the U.S. Embassy, Pakistan, 2 August 1982. Declassified 19 August 1988.

with internal strife, as separatist forces in Punjab, Kashmir and Assam were threatening to undermine national unity.¹⁰⁶

This insecurity escalated between October 1983 and October 1984, leading to a decision to weaponise sometime between March and October. The motivations behind - and timing of - this decision are difficult to establish from the scarce evidence, but it is possible that it could have been provoked by a combination of two dramatic events between October 1983 and March 1984, and India's long-standing concerns over the arms transfers from the United States to Pakistan. The first trigger may have been the crisis that erupted over the separatist movements in Sindh and Punjab. The second may have been the publication of an interview with Dr. A. Q. Khan, the head of the research facility at Kahuta, in which he apparently revealed Pakistan's ability to enrich uranium. The earlier event created the hostile environment that ensured Khan's comments would be greeted with horror and dismay. Antagonism between India and Pakistan over the activities of the Sindhi and Punjabi separatists had been simmering for some time, but reached crisis point in autumn 1983, with Islamabad accusing New Delhi of supplying arms to Sindh, and New Delhi making similar allegations about Islamabad's supply of arms to the militants in Punjab.¹⁰⁷ In addition, Indira Gandhi denounced Pakistan's inhumane treatment of the Sindhis and one of her MPs declared that the time was ripe for Sindh to become part of India.¹⁰⁸ Both sides accused the other of interfering in their internal affairs and amassed troops on both sides of the border between December and January.¹⁰⁹ The crisis was diffused by the beginning of February 1984, but Khan's remarks over Pakistan's nuclear capabilities later that month

¹⁰⁶ U.S. NSA, Washington DC: *Confidential cable #1981*; SWB/FE/7388/B4, 18 July 1983.

¹⁰⁷ SWB/FE/7442/A3/4, 19 September 1983; SWB/FE/7464/A3/3, 14 October 1983.

¹⁰⁸ This comment was made by an Indian MP at the inauguration of the world Sindhi Sammelan, which Indira Gandhi also attended on 18 October 1983. D. Bobb, 'Descent to Acrimony,' *India Today*, 15 December 1983, p. 86.

¹⁰⁹ Early December was the usual time for annual military exercises to be held, but Indian believed that the scale and pattern of the deployment of Pakistani troops in the Pakistani controlled Azad Kashmir was unprecedented. Four out of the seven corps of the Pakistani army were exercising along the border. In response to this, India deployed 29 army divisions and two-thirds of its fighters on Pakistan's borders in Jammu and Kashmir and Rajasthan. The confrontation reached crisis point in January, when Pakistan accused India of border violations in Kashmir and alleged that Indian forces had fired 11 times in the Kolti sector since the beginning of January. Indira Gandhi then made an emergency address to the nation on 15 January and warned that India's security was under severe threat from Pakistan. 'The Sabres Rattle,' *Far East Economic Review*, 8 December 1983, pp. 40-41; SWB/FE/7533/A3/1, 6 January 1984; SWB/FE/7542/B/1-3, 17 January 1983.

had the effect of rubbing salt into an open wound, as did news that Pakistan would be procuring more sophisticated military equipment from the United States between October and December 1984.¹¹⁰

Indira Gandhi's reaction to this situation was to seriously consider weaponising the nuclear option. When asked in parliament on 28 March 1984 what action the government was planning to take after Khan's revelations and reports that China was assisting Pakistan's nuclear development, she replied that 'the government is vigilant in the matter. Indian scientists are keeping abreast of all aspects of research and development connected with modern and relevant technologies.'¹¹¹ Although she was not prepared to admit publicly that weaponisation was under consideration, there are indications that this was indeed the case. This is corroborated by the existence of an unofficial committee, which was set up sometime between 1983 and 1984 to review India's nuclear doctrine. Unfortunately, nothing was put in writing, and it is difficult to establish the membership of this secret group.¹¹² However, it is known that Ventataraman, the Defence Secretary, P. K. Kaul, the Scientific Advisor, Arunachalam, and the then head of the AEC, Ramanna, were all present at the meetings and that they reported to the Prime Minister.¹¹³ It has been suggested that a decision to weaponise was taken by this select group between March and July 1984, but that the decision was reversed within 48 hours.¹¹⁴

If the decision was taken towards the latter part of this time frame, it is likely that additional factors were involved. Between April and June 1984

¹¹⁰ Asked whether Pakistan could make the bomb, Dr. Khan said: 'We have the capacity to complete such a task. This is a political decision in which my colleagues and I have no concern, except for the sake of the country's safety and security. Our honourable President has to make such a momentous decision...We will stake our lives but we will not disappoint the country and the nation.' This comment was significant, not because it exposed the existence of Pakistan's nuclear programme (this had been exposed in 1979), but because it was the first time any high ranking official in Pakistan had openly admitted Islamabad's capabilities and intentions. *SWB/FE/7568/C/1-C/7*.

The Indian Defence Minister expressed his concerns over the continuing supply of arms from the United States to Pakistan in March. *SWB/FE/7602/A3/8*, 27 March 1984.

¹¹¹ *Seventh Lok Sabha Proceedings*, 'Calling Attention on Nuclear Collaboration between Pakistan and China,' 30 March 1984, column 398. Concerns over nuclear collaboration between China and Pakistan had been raised in early March, when India declared that China's assistance to Pakistan over the construction of a runway at Gilgit were illegal and would be detrimental to India's security. *SWB/FE/7588/A3/11*, 10 March 1984.

¹¹² Apparently, arrangements were made to disguise the involvement of the atomic establishment in these meetings. Raja Ramanna was asked to come into the room first and then the others would arrive. He would then leave 15 minutes before anyone else did, to give the impression that it was an accidental meeting. Sidhu (1997), p. 282.

¹¹³ *Ibid.*

¹¹⁴ *Ibid.*, p. 230.

tensions between Pakistan and India were amplified by a series of incidents in Kashmir, and by reports in the U.S. Congress that Islamabad had accelerated its nuclear programme. India's concerns over the future of Kashmir had been expressed by Rajiv Gandhi in February, when he announced that he believed Pakistan was planning to invade Kashmir within a year. This was followed by numerous firing incidents by Pakistani troops on the Kashmiri border, and news that Islamabad was building a 100 kilometre-long all weather road in the area.¹¹⁵ This gave the government even more cause for concern. In May, Ventataraman told the Lok Sabha that three-quarters of the Indian army had been deployed along the Indo-Pakistan border.¹¹⁶ This action was justified on the grounds that Pakistan's nuclear intentions were less than peaceful - an allegation corroborated by U.S. intelligence revelations about Pakistan's nuclear activities,¹¹⁷ and by reports that China had provided Pakistan with nuclear designs and uranium enrichment technology.¹¹⁸

The crisis peaked between September and October. Tensions reached a critical point when the United States informed Pakistan that its spy satellites were unable to locate two of India's Jaguar squadrons, leading to speculation that India was planning to launch a pre-emptive strike on the Kahuta facilities.¹¹⁹ This was followed by reports that Washington was thinking of bringing Pakistan under its nuclear umbrella,¹²⁰ and Ambassador Hinton's announcement at the Council of National Security Studies (CNSS) in Lahore, that the United States would be 'responsive' if India attacked Pakistan.¹²¹ At this point India's defence analysts believed that New Delhi could soon be subjected to nuclear blackmail, and it is possible that this sparked the decision to

¹¹⁵ *The Statesman*, 19 May 1984.

¹¹⁶ *The Statesman*, 9 May 1984.

¹¹⁷ On 21 June 1984, Senator Cranston told Congress that Islamabad had stepped-up work on the nuclear bomb, and could produce an arsenal of twelve bombs in the next three to five years. *U.S. Congressional record - Senate*; S-7901, 21 June 1984.

¹¹⁸ *New York Times*, 21 June 1984.

¹¹⁹ *SWB/FE/7751/A3/8-9*, 18 September 1984.

¹²⁰ These reports were based on a letter from President Ronald Reagan to General Zia, the content of which was published in Islamabad and New Delhi. There are doubts over whether the letter was correctly translated from English to Urdu, as the United States denied that there was any truth in the story that it had promised to provide Islamabad with a nuclear umbrella. *New York Times*, 21 October 1984; *SWB/FE/7777/A1/2*, 18 October 1984.

¹²¹ Sidhu (1997), p. 135.

weaponise.¹²² Why the decision was reversed within 48 hours is a mystery, although it may have been a response to external pressure, or a result of positive developments in negotiations with Pakistan over a non-aggression pact, which had been underway since May.¹²³

4. Nuclear signalling, 1984-1990.

The doctrine of recessed deterrence was reassessed again during Rajiv Gandhi's premiership. On assuming office, his aim was to diffuse the situation between Islamabad and New Delhi by reaching a mutual understanding with President Zia-ul-Haq not to attack each other's nuclear facilities.¹²⁴ At this point he appears to have been content to pursue a policy of recessed deterrence, but at the same time to ensure that the option was fully developed without resorting to overt weaponisation. Consequently, there was no let up in the production of fissile material or in the missile programme, and India's military doctrines were put through their paces in a massive military operation, named Exercise Brasstacks. However, relations between India and Pakistan deteriorated rapidly during 1986-87, and Gandhi was forced to review India's nuclear doctrine in response to claims that Pakistan was on the brink of weaponising.

The Brasstacks exercise misfired. Although its aim was to test India's military doctrines in the field, in order to provide New Delhi with a greater sense of security, it had the opposite effect, acting as a catalyst to the nuclear arms competition between India and Pakistan. The Indian government did not anticipate Islamabad's hostile reaction to the military build-up across its border.¹²⁵ However, between November 1986 and February 1987, tensions between the two countries escalated to the point where both sides prepared for war.¹²⁶ Attempts to alleviate Pakistan's insecurity were made by Rajiv Gandhi

¹²² A senior defence analyst at the IDSA argued that Reagan's letter indicated that India could be exposed to nuclear blackmail, and urged the government to review its nuclear policy. *SWB/FE/7781/A3/5-6*, 23 October 1984.

¹²³ *SWB/FE/7651/A3/5*, 24 May 1984.

¹²⁴ *The Times of India*, 18 December 1985.

¹²⁵ Pakistan responded to the massive Brasstacks exercise by mobilising along the Punjabi border, and by making veiled nuclear threats against India. The point that this reaction was not anticipated has led the Brasstacks episode to be described as the 'accidental crisis.' Sidhu (1997), p. 144.

¹²⁶ Pakistan's commanding General, Khalid Mahmud Arif, responded to the Brasstacks exercise by deploying armoured units north of the Sutlej River. When this was detected by Indian reconnaissance, Indian officials feared that Arif was

during talks with General Zia, and by India's Foreign Secretary, A. P. Venkateswaran, who travelled to Islamabad to sign an agreement not to attack each other's nuclear installations in January 1987.¹²⁷ This had positive results, leading to de-escalation at the beginning of February. However, although the immediate crisis had ended, mistrust and insecurity remained on both sides, and the stage was set for another round of nuclear signalling between the two adversaries.¹²⁸

Gandhi came under renewed pressures to weaponise after the crisis had past, when the U.S. Ambassador to Islamabad, Deane R. Hinton, implied in a speech that Pakistan had produced all the components needed to fabricate a nuclear explosive device.¹²⁹ These claims were corroborated by a comprehensive study of the South Asian arms competition, compiled by the Carnegie Endowment for International Peace in Washington, D.C. The report, which was published on 24 February, warned that Pakistan either possessed all the components necessary for 'one or several atom bombs' or was just short of this goal because it had not yet produced enough weapons-grade uranium.¹³⁰ This report was discussed in the Lok Sabha on February 27, during which time several legislators urged the government to review its nuclear policy.¹³¹ These pressures intensified on 28 February when, in an interview with *The Observer*, Dr Khan admitted that Pakistan could fabricate nuclear weapons.¹³² Later, on 24 March, Khan's statement was backed up by President Zia, who admitted that 'Pakistan has the capability of building the bomb. [It] can build a bomb whenever it wishes.'¹³³ Gandhi's response was to ask the defence and foreign ministries to

preparing to attack vulnerable positions in the Punjab. This fear may have been irrational given the deliberately defensive posture of the Pakistani forces, but can be explained if India's domestic insecurity is taken into account. Pakistan had been supporting Sikh radicals in the Punjab long before the Brasstacks exercise, backing their claims to a separate homeland called Khalistan. Sikh grievances had been escalating throughout the 1980s, and India was afraid that Pakistan would exploit this situation, just as India had exploited Pakistan's domestic problems in 1971. This situation brought both sides to the brink of a war that neither had planned nor wanted. Paul R. Brass, 'The Punjab Crisis and the Unity of India,' in Atul Kohli (ed.), *India's Democracy: An Analysis of Changing State-Society Relations* (Princeton: Princeton University Press, 1988); Joeck, pp. 24-25.

¹²⁷ *Ibid.*, p. 163.

¹²⁸ Bajpai et. al., *op. cit.*, p. 27.

¹²⁹ Hagerty (1995), p. 197.

¹³⁰ *Ibid.*

¹³¹ *Ibid.*, p. 199.

¹³² *Ibid.*

¹³³ Ross H. Munro, 'Knocking at the Nuclear Door,' *Time*, 30 March 1987, p. 42.

'make a fresh assessment of Pakistan's nuclear status in the light of Khan's quoted statements,'¹³⁴ and to confirm that he intended to meet President Zia's threat, declaring that 'we will give an adequate response.' A top Indian official also gave an interview to *Time* magazine, during which he indicated that 'India has atomic weapons components on the shelf and a special team ready to assemble them.'¹³⁵

5. The 1990 crisis.

Despite the tension, New Delhi decided not to weaponise its nuclear capability during the Brasstacks crisis. Gandhi was keen to keep New Delhi's options open, realising that a great deal of ambiguity existed over the extent of Pakistan's capabilities. While doubt over this question existed, he preferred to retain the doctrine of recessed deterrence. However, renewed problems between Islamabad and Kashmir in 1990, brought this issue to the forefront again, as India's new government, led by V. P. Singh, struggled to suppress militant insurgency by Kashmiri separatists. The crisis was sparked by the massacre - by Indian police - of demonstrators who had defied a government curfew. Appalled by this brutality, and recognising the opportunity to intervene, President Benazir Bhutto loudly proclaimed Kashmir's right to self-determination and began to take an active role in support of the protesters. In response to Bhutto's action, Singh mobilised India's conventional forces and decided to raise India's nuclear profile, perhaps to send a deterrent message to Pakistan.

Singh's first move was to transfer prominent nuclear scientists into senior government posts: Raja Ramanna was made Minister of State for Defence and P. K. Iyengar was appointed Chairman of the AEC. At the time, this was considered to be a sign that Singh had decided to give higher priority to India's nuclear programme.¹³⁶ In February, as New Delhi began to fear that Islamabad was planning to launch a 'sizeable offensive on Indian territory,' Singh

¹³⁴ Vyvyan Tenorio and Shahid-ur Rehman, 'Pakistan Denies it has Bomb, but Tensions Rise in India,' *Nucleonics Week*, 5 March 1987, p. 8.

¹³⁵ Ross H. Munro, 'Superpower Rising,' *Time*, 3 April 1989, p. 16.

¹³⁶ Mark Hibbs, 'Iyengar, Ramanna Appointments Open Bomb Speculation in India,' *Nucleonics Week*, 22 February 1990.

declared that, if the situation over Kashmir deteriorated, India might be forced to review its peaceful nuclear policy.¹³⁷ The former Prime Minister, Rajiv Gandhi, urged Singh to take strong steps over the crisis, emphasising that he was aware 'what is in the pipeline and what the capabilities are.'¹³⁸ Singh responded by threatening Pakistan with heavy losses unless it withdrew its forces from the border, leading some journalists and politicians to believe that Islamabad and New Delhi were on the brink of nuclear war.¹³⁹

6. Pressure to weaponise, 1990-97.

The most significant aspect of the 1990 crisis was India's reluctance to weaponise, despite reports that Pakistan had already done so. Both Singh and Bhutto exchanged heated threats during the confrontation, but war was avoided and the doctrine of recessed deterrence appears to have remained in tact in New Delhi. It is feasible that this outcome was possible because neither Singh, Ramanna, nor Iyengar, believed the stories about Pakistan's nuclear capabilities. In 1994, Dr. Homi Sethna, once the lead of the AEC, argued that Pakistan had been bluffing about the advanced stage of its technological development all along, and that Pakistan did not have a nuclear capability because it could not enrich uranium beyond 60 per cent.¹⁴⁰

However, throughout the 1990s, less optimistic estimates of Pakistan's nuclear capabilities were offered by India's non-official strategists, the most vocal being Vijai K. Nair, who argued that India can 'safely reckon' that Pakistan could employ two to four nuclear explosive devices in a matter of three hours from decision time; would have at least two F-16 aircraft standing by for nuclear missions; could strike Delhi or Bombay; and could strike with zero

¹³⁷ Devin Hagerty, 'Nuclear Deterrence in South Asia: The 1990 Indo-Pakistani Crisis,' *International Security* 20 (Winter) 1995/6, p. 98.

¹³⁸ *Ibid.*, p. 99.

¹³⁹ The journalist, Seymour Hersh, later claimed that Pakistan was planning to deliver nuclear weapons on Indian targets during the 1990 crisis. However, although there were reports that Pakistan had crossed the nuclear threshold sometime in 1990, there is no evidence to corroborate his thesis that Islamabad was preparing to launch a nuclear attack. Seymour M. Hersh, 'On the Nuclear Edge,' *New Yorker*, 29 March 1993; Hagerty (1995/6), p. 103.

¹⁴⁰ *Ibid.*

warning.¹⁴¹ It is difficult to establish whether India's nuclear decisionmakers took Nair's estimates seriously, but an increasing number of India's non-official strategists were advocating a change of policy for India in response to the perceived nuclear threat from Pakistan. An analysis of strategic thinking amongst the academic, scientific and military communities at the time shows a growing interest in the concept of deterrence, and a growing consensus about the need for India to develop a minimum deterrence in the interests of peace in South Asia. In particular, this group of strategists highlighted the nuclear threat from China and Pakistan, the unpredictable and destabilising effects of maintaining a recessed deterrence in these circumstances, and the benefits of open nuclear deployments, based on their belief that India and Pakistan could use nuclear weapons to prevent war in the same way that the United States and the Soviet Union used nuclear weapons to maintain the 'long peace' during the Cold War.¹⁴²

7. The 1995 test preparations and the BJP

Rumours that India was planning another nuclear test reached the international media in December 1995, and were followed by rumours that Pakistan was planning to respond in kind.¹⁴³ The ensuing press reports were met with adamant denials from both countries, who blamed faulty intelligence investigations and inaccurate journalism for spreading misinformation.¹⁴⁴ However, unusual movements had been spotted by a U.S. spy satellite, and Washington warned New Delhi that an Indian nuclear test would be interpreted by the international community as an act of aggression. Plans to conduct a nuclear explosion in early

¹⁴¹ Brigadier Vijai K. Nair, 'Nuclear Realities - 1995 The Year of the Extension,' *AGNI Studies in International Strategic Issues* 1 (April) 1995, pp. 44-45.

¹⁴² Gregory F. Giles and James E. Doyle, 'Indian and Pakistani Views on Nuclear Deterrence,' *Comparative Strategy* 15 (1996). See also K. K. Nayar, 'Emerging Areas of Conflict in the Twenty-First Century,' and V. K. Nair, 'Nuclear Realities - 1995 The Year of the Extension,' both in *AGNI Studies in International Strategic Issues* 1 (April) 1995; V. K. Nair, 'Strategic Compulsions of Deterrence: An Indian Perspective,' *Indian Defence Review* 9 (July) 1994; V. K. Nair, 'Nuclear Proliferation in South Asia: U.S Aims and Indian Response,' *Studies in Conflict and Terrorism* 17 (June) 1994; K. Sundarji, 'India's Nuclear Weapons Policy,' and Ashok Kapur, 'The Nuclear Development of India and Pakistan,' in John Gjelstad and Olav Njolstad (eds.), *Nuclear Rivalry and International Order* (Oslo: PRIO, 1996); Brahma Chellaney, 'The Challenge of Nuclear Arms Control in South Asia,' *Survival* 35 (Autumn) 1993; Brahma Chellaney, 'South Asia's Passage to Nuclear Power,' *International Security* 16 (Summer) 1991; Sumit Ganguly, 'Emergent Security Issues in South Asia,' *Director's Series on Proliferation* (June) 1995.

¹⁴³ 'India-Pakistan Tensions, Rumours and Recriminations,' *Disarmament Diplomacy* (3 March) 1996, p.39.

¹⁴⁴ *Ibid.*

1996 were therefore dropped. However, evidence of test preparations suggests that New Delhi's nuclear decisionmakers had heeded the warnings issued by India's non-official strategists. This is reinforced by reports that, throughout the early 1990s, the DRDO was undertaking work on an ambitious missile programme. In addition to work on the Prithvi and Agni missiles, in 1992 a project was launched to develop the submarine-launched missile, Sagarika.¹⁴⁵ Unnamed defence sources, quoted in the Indian media, claim that this project is the most ambitious and technologically advanced missile programme yet, and that it is due for completion by 2005.¹⁴⁶

India's humiliation over the test preparations was closely followed by the election of the pro-nuclear Hindu nationalist Bharatiya Janata Party (BJP) in May 1996, which heightened fears that India was about to abandon over 20 years of nuclear restraint and develop a nuclear arsenal.¹⁴⁷ Reports that the BJP was planning to re-evaluate the country's nuclear policy, increase defence spending, and conduct another nuclear test were confirmed by the pro-nuclear statements of the Defence Minister, Pramod Mahajan, and the Prime Minister, Vajpayee.¹⁴⁸ However, despite all the warning signals, India's nuclear weapons tests in May 1998 took the international community by surprise.

8. The nuclear tests, May 1998.

On 11 May 1998, India conducted three underground nuclear tests at Pokhran, followed by two further tests two days later.¹⁴⁹ Although experts have expressed their doubts over whether India actually tested a thermonuclear device or completed its nuclear test programme, the tests are thought to reflect India's

¹⁴⁵ Sidhu (1998), p. 24.

¹⁴⁶ Ibid.

¹⁴⁷ 'Indian Election Results In Uncertainty and Tension on Nuclear Issue,' *Disarmament Diplomacy* (6 June) 1996, p. 50.

¹⁴⁸ Vivek Raghuvanshi, 'India's New Leaders To Fortify Nuke Policy, Heighten Readiness,' *Defense News* 11 (May 20-26) 1996.

¹⁴⁹ Preparations for the May test escaped detection this time, partly because scientists from the Indian Space Research Organisation (ISRO) had supplied a vast pool of data about the orbits and timings of various spy satellites to the people at work on the project. This helped them stay away from the site whenever the satellites passed overhead. Attention was also deliberately diverted from Pokhran, in the north west of the country, towards the interim missile testing range at Chandipur, on the eastern coast, where the test-firing of the Trishul short-range missile was scheduled for the same day. The international community was therefore unable to exert pressure on the Indian government before the tests were carried out. Rethinaraj, p. 19.

desire to weaponise and to acquire a wide range of weapons for its arsenal, ranging from low-yield to fusion weapons.¹⁵⁰ Even if nuclear-armed delivery vehicles are not fully deployed, the tests, and subsequent statements made by the BJP, indicate that India's nuclear doctrine has now moved from non-weaponised to weaponised nuclear deterrence.¹⁵¹

India's decision to finally abandon its ambiguous nuclear stance was part of a gradual, on-going process that dated back at least to the early 1990s, if not the 1980s. The timing of the tests may have surprised the international community, but as this chapter has shown, India's nuclear policy had been moving in the direction of overt weaponisation for some time. However, a number of triggers were required to push India over the threshold. First, India felt the technological gap with China to be widening, and its strategic advantage over Pakistan to be narrowing. News of China's defence modernisation programme and Pakistan's missile programme were the source of great discomfort in New Delhi. Although relations with China appeared to be improving following constructive negotiations over the disputed Himalayan border, India continued to feel threatened by its powerful adversary. In addition, relations with Pakistan were deteriorating due to the long-running dispute over Kashmir. In spring 1998, these tensions escalated, when Pakistan's launch of the Ghauri missile removed India's missile superiority over its neighbour and also exposed the duplicity of China's India policy.¹⁵² The nuclear tests would not close the gap in strategic capabilities between India and China, or reassert India's superiority over Pakistan, but they would demonstrate India's nuclear capability and its intention to dispel any remaining questions over the credibility of its nuclear deterrent.¹⁵³

¹⁵⁰ Rethinaraj, pp. 19-20; Sidhu (1998), p. 23; *The Times*, 15 May 1998.

¹⁵¹ William Walker, 'International Nuclear Relations After the Indian and Pakistani Test Explosions,' *International Affairs* 74 (July) 1998, p. 518.

¹⁵² Reports that China had assisted Pakistan's missile programme caused bitterness in India, particularly as Sino-Indian relations had been thawing since the end of the Cold War. Stephen Grey, 'Pakistan Plays Nuclear Poker With India,' *Sunday Times*, 22 March 1998; Christopher Thomas, 'Indian Missiles Fuel Arms Race With Pakistan,' *The Times*, 15 April 1998; Terese Delpeche, 'Nuclear Weapons: Their Present and Future: A Debate.' Paper presented at the IISS 40th Annual Conference, Oxford, 3-6 September 1998.

¹⁵³ John Simpson, 'Smoke and Mirrors,' *The World Today* (July) 1998, p. 178.

Second, India's conventional military capabilities had been deteriorating since the 1980s. India is still dependent on Soviet era platforms and weapons with their associated maintenance problems.¹⁵⁴ As a result, India's army and navy has been crippled by a lack of usable weaponry and spare parts. In addition: insufficient attention has been given to changes in military culture and organisation; inventories of military equipment are poorly maintained, and many are obsolete; and there is a lack of advanced computer hardware and systems software.¹⁵⁵ Consequently, not only is India incapable of responding to the revolution in military affairs (RMA), but a recent RAND report has claimed that the Indian army now lacks the ability to coordinate a large scale military campaign.¹⁵⁶ This has left the Indian government feeling vulnerable and more heavily dependent on its nuclear deterrent. Under such circumstances, weaponisation appears less surprising.

Third, India was feeling alienated by the international community, over Kashmir and the nuclear nonproliferation issue. Since the end of the Cold War, and the sudden surge in international concern over the destabilising effects of ethnic and regional conflicts and nuclear proliferation, India has increasingly been categorised as a pariah state.¹⁵⁷ This has been caused by India's principled and inflexible approach to the NPT and the Comprehensive Test-Ban Treaty (CTBT), which India's leaders have argued are discriminatory and hypocritical, and India's belief that arms control and disarmament measures are being used by the NWS to marginalise New Delhi.¹⁵⁸ India insisted that it would not be prepared to cooperate over the nuclear issue until the NWS made a greater commitment to - and took steps towards - the goal of universal nuclear

¹⁵⁴ Paul Dobb, 'The Revolution in Military Affairs and Asian Security,' *Survival* 39 (Winter) 1997-8, p. 101.

¹⁵⁵ *Ibid.*, pp. 101-104.

¹⁵⁶ *Ibid.*, p. 100.

¹⁵⁷ Lewis A. Dunn, 'A Widening Nuclear Circle: South Asian Choices in a Broader Perspective,' in Francine R. Frankel (ed.), *Bridging the Nonproliferation Divide: The United States and India* (Maryland: University Press of America, 1995).

¹⁵⁸ William Walker, 'Evolutionary Versus Planned Approaches to Nuclear Disarmament,' *Disarmament Diplomacy* 15 (May) 1995, p. 4; Vijai K. Nair, 'CTBT: Instrument for Eliminating Nuclear Weapons or Projection of U.S. Policies?' *AGNI Studies in International Strategic Issues* 1 (November) 1995; Vijai K. Nair, 'Nuclear Realities - 1995 The Year of the Extension,' *AGNI Studies in International Strategic Issues* 1 (April) 1995; Vijai K. Nair, 'Nuclear Proliferation in South Asia: U.S. Aims and Indian Response,' *Studies in Conflict and Terrorism* 17 (June) 1994; K. Sundarji, 'India's Nuclear Weapons Policy,' in Gjelstad and Njolstad, *op. cit.*; Ashok Kapur, 'The Nuclear Development of India and Pakistan,' in Gjelstad and Njolstad, *op. cit.*

disarmament.¹⁵⁹ This approach did not win India many friends. Indeed, even before the nuclear tests were conducted in May 1998, India was facing severe criticism over its nonproliferation policy from an exasperated international community. India felt this criticism to be grossly unfair, describing the nonproliferation regime as a form of 'nuclear apartheid' - an immoral order aiming to keep India in a position of inferiority.¹⁶⁰ From, India's perspective then, the nuclear tests might provoke international outrage, but New Delhi's reputation was already heavily soiled anyway, and at least the tests might provide a way out of the deadlocked negotiations. Following the explosions, India would be in a position whereby it would be able to both make and demand concessions. Moreover, the tests would allow India to increase its prestige and vent its anger over the hypocrisy of the hated nonproliferation regime.¹⁶¹

Fourth, public opinion in India had been moving towards a more pro-nuclear position during the 1990s. In the past, public debate on the nuclear issue tended to be low key, with the intelligentsia more concerned about the subject of communalism and the problems of poverty, economic instability, terrorism and ethnic conflict.¹⁶² However, since the early 1990s, nuclear issues have been receiving more attention in the Indian media, in public forums, and in the houses of parliament, and in spring 1996 nuclear policy became an election issue for the first time. This surge in public interest appears to have been caused by public perceptions of the inequitable and discriminatory nature of the nonproliferation regime.¹⁶³ Prime Minister Rao was subject to strong domestic pressure not to bow to U.S. pressure during 'secret' talks in London in March and April 1994, and in response to U.S. pressure following the extension of the NPT in May 1995, India's strategic thinkers recommended that the government should transform the nuclear option into 'effective deterrence.'¹⁶⁴ This shift in attitudes

¹⁵⁹ Sudhir Sawant, 'NPT: India's Policy,' *AGNI Studies in International Strategic Issues* 1 (April) 1995, p. 21.

¹⁶⁰ Walker (1998), p. 511.

¹⁶¹ Ibid.

¹⁶² D. Som Dutt, *India and the Bomb*. Adelphi Paper 37 (London: International Institute for Strategic Studies, 1966); Ashis Gandhi, 'The Bomb, the NPT and Indian Elites,' *Economic and Political Weekly* (August) 1972; 'The Nuclear Debate,' *World Focus* 2 (June) 1981; David Cortright and Amitabh Mattoo, *India and the Bomb: Public Opinion and Nuclear Options* (Notre Dame, IN: University of Notre Dame Press, 1996).

¹⁶³ Cortright and Mattoo, pp. 46-48.

¹⁶⁴ Ibid.

was later reflected by a newspaper survey of popular opinion in December 1995, which claimed that 43 per cent of respondents were more inclined to support a political party that would ensure that India would weaponise.¹⁶⁵ This shows a significant increase in support for outright acquisition compared to a similar survey conducted in autumn 1994.¹⁶⁶

The openly pro-nuclear BJP capitalised on this shift in opinion during the April 1996 and March 1998 elections, and there is a strong possibility that the BJP's leader, Vajpayee, hoped to capitalise on this again in May. The BJP-led coalition government had been paralysed since assuming office in March, due to political infighting, and in April the government had been on the brink of falling.¹⁶⁷ This coincided with the decision to prepare for the tests, which was taken one month before the tests were conducted.¹⁶⁸ It has been argued that Vajpayee hoped that the tests would strengthen the BJP's position within the coalition or, failing that, win the party support in the event of another election.¹⁶⁹ Reports that the Prime Minister had kept the cabinet - which included non-BJP members - in the dark over the decision, adds weight to this argument.¹⁷⁰

In the short term, Vajpayee's strategy appears to have succeeded. The overwhelming majority of the Indian people supported the tests, and newspaper reports described a 'carnival atmosphere' throughout the country as the Indian public celebrated its renewed sense of national pride.¹⁷¹ Vajpayee had demonstrated that he would do 'whatever needs to be done' and that he was 'not bothered about anyone's objections.'¹⁷² This represented a major break from the past, and was perceived as a blow to nuclear apartheid and a massive boost to India's self-confidence and prestige.

¹⁶⁵ Ibid., p. 48.

¹⁶⁶ This opinion poll was conducted by the Marketing and Research Group (MARG), New Delhi, on behalf of the University of Notre Dame, Indiana.

¹⁶⁷ An anonymous BJP MP claimed that this was the principal motivation behind the tests. *The Daily Telegraph*, 13 May 1998.

¹⁶⁸ Rethinaraj, p. 22.

¹⁶⁹ Ibid.

¹⁷⁰ Ibid.

¹⁷¹ *Sunday Times*, 17 May 1998.

¹⁷² *The Times*, 22 March 1998.

Part IV: Empirical conclusions

Five empirical conclusions can be drawn from this empirical analysis of India's nuclear weapons policy:

1. The conventional and nuclear threats posed by China (since the late 1950s), and the nuclear threat posed by Pakistan (since the late 1970s) have been the direct cause of the insecurity that has driven India's nuclear policies.
2. Internal threats to India's national cohesion, caused by a lack of territorial integrity and social and religious divisions, have often exacerbated India's insecurity, acting as a 'remote' proliferation cause.
3. India has valued its nuclear capability for its military and political utility. During the 1960s and early 1970s, New Delhi used the nuclear issue as a bargaining chip to extract military and economic concessions from Washington and Moscow. From the late 1970s, the bargaining chip strategy was replaced with a deterrent strategy, as India engaged in nuclear signalling to deter perceived threats from China and Pakistan. In addition, during much of the period, India's nuclear policies have been geared to achieving India's principal foreign and domestic policy goals - the acquisition of international prestige and national unity.
4. On at least two occasions, domestic political factors appear to have been a direct proliferation cause. The timing of India's nuclear tests cannot be explained unless the domestic political ambitions of the troubled Congress Party (in 1974) and the paralysed BJP (in 1998) are taken into account.
5. On at least two occasions, developments in India's nuclear policy could not be understood unless the principled beliefs of influential decisionmakers were taken into account. The moral opposition to nuclear weapons of both Sarabhai and Desai appears to have been a direct cause of India's policy reversals in 1966 and 1977 respectively.

Part V: Theoretical analysis

This section explores neorealist explanations of India's nuclear activities over the last four decades. The aim is to assess the utility of neorealist theories in this specific context, to highlight the areas where structural analysis can contribute to

our understanding of the proliferation dynamics at work in the Subcontinent, and to expose the difficulties associated with applying grand theory to complex phenomena. It begins by assessing the explanatory power of parsimonious neorealism. The purpose of this analysis is to assess the validity of purely structural interpretations of proliferation decisions, and the concept of polarity as a source of explanation. Next, the explanatory value of the concept of anarchy is explored. The principal question is: should India's nuclear decisionmaking be regarded as a response to the pressures created by the anarchic character of the international system? In other words, have India's nuclear policies been driven by fear and insecurity and, more specifically, by the arms racing dynamics generated by anarchy? Last, the explanatory power of structural realism is explored, using the theoretical constructs of attributive power and interaction capacity. The question to be addressed in this section is: can the multi-level theory of structural realism provide more insight into the causes of nuclear proliferation?

1. Parsimonious neorealism

Using the parsimonious version of neorealism developed by Waltz, some theorists have argued that the competition between the United States and the Soviet Union during the Cold War generated a powerful nonproliferation dynamic. Under bipolarity, the superpowers extended their spheres of influence, bringing less powerful states under their nuclear umbrellas, and thereby removing their need for an independent nuclear capability. However, this chapter has shown that India's nuclear behaviour cannot be explained using structural arguments. During the 1960s, India's leaders did seek a nuclear guarantee, but failed to acquire one. Eventually, a Friendship Treaty was signed with the Soviet Union in 1971, but although Moscow was prepared to supply India with conventional arms, financial aid, and a degree of diplomatic support, this assistance stopped short of a nuclear guarantee. India therefore developed an indigenous nuclear weapons capability, and efforts were made to gain complete control of the nuclear fuel cycle in order to limit dependency on outside suppliers.

Given the level of competition between Moscow and Washington during the Cold War, their resistance to India's overtures appears surprising. The fundamental question, to which parsimonious neorealism cannot provide an answer is: why was India unable to obtain a nuclear guarantee?

Post-Cold War nuclear developments in India have also undermined structural determinist predictions and explanations. Neorealists used the concept of polarity to predict that proliferation pressures would escalate under multipolarity due to the breakdown of superpower security arrangements.¹⁷³ However, although proliferation pressures in India have increased during the 1990s, structural pressures do not appear to be responsible for this increase. New Delhi has maintained close links with Moscow since the end of the Cold War, and has used these ties to obtain sophisticated defence technologies. This does not represent a major change in bilateral relations between the two states. India was unable to rely on a Soviet nuclear umbrella during the Cold War and, in this respect, little has changed. So why has India been preparing to conduct further nuclear tests, since the early to mid-1990s? Why were the tests eventually carried out despite elite concerns over their potentially damaging strategic, political, and economic consequences? Why has India announced its intention to abandon 24 years of recessed deterrence and to weaponise its nuclear option? The explanations derived from the concept of polarity fail to provide a satisfactory answer to any of these questions.

2. Balance of power theory

Most varieties of neorealism derive predictions and explanations of behaviour from the concept of anarchy rather than from polarity. Based on this approach, changes in the balance of power between rivals are more significant than changes in the distribution of power between the most powerful states in the international system. The logic of anarchy forces states to imitate their competitors in order to survive, creating a powerful dynamic that ensures states

¹⁷³ Dunn (1995), p. 93.

will try to match the strategic capabilities of their adversaries. Arms racing is therefore the inevitable consequence of the insecurity created by anarchy. Only a major change in the ordering principle of the international system - that is, a shift from anarchy to hierarchy - would alleviate this insecurity.

This theory, which is sometimes labelled balance of power theory, can provide significant insight into the motivations and conditions driving India's nuclear policies from the 1950s to the present day. In India's case, China's superior conventional capabilities, and the nuclear capabilities of both China and Pakistan, have created intense insecurity, leading to balancing behaviour.¹⁷⁴ To a certain extent, nuclear weapons have been viewed as a strategic equaliser, aimed at deterring conventional and nuclear attacks. This provides the most basic explanation of the conditions and motivations that underlie India's nuclear weapons programme. It cannot account for all the twists and turns of India's nuclear development or its nuclear diplomacy, but it does provide a starting point for any explanation of India's nuclear behaviour.

Since China emerged as an independent state in 1949, India has been sensitive to the security threat posed by its more powerful neighbour. This strategic insecurity lies at the root of India's nuclear development, ensuring that the military uses of nuclear power were explored even before China proved both its conventional superiority in the border war of 1962, and its nuclear capability in the Lop Nor test of October 1964. However, Beijing's demonstration of its military might on these two occasions were significant, triggering Shastri's decision to conduct India's own nuclear test. From this point onwards, a pattern can be identified in India's nuclear behaviour, with New Delhi's political leaders responding to advances in China's nuclear programme with further developments in - and demonstrations of - India's own nuclear and delivery

¹⁷⁴ Scholars and analysts who argue that military insecurity - provoked by conventional and nuclear developments in China and Pakistan - created the balancing dynamics that fuelled India's nuclear development, include: Alam, pp. 11-13; Betts, p. 1056; Joeck, p. 30; Denny Roy, 'The "China Threat" Issue,' *Asian Survey* 36 (August) 1996; Joseph A. Yager, 'Nuclear Nonproliferation Strategy in Asia,' *CNSN Paper* 1 (July) 1989, p. 18; Nayar, p. 12; Sundarji (1996), p. 148; Brahma Chellaney, 'The Challenge of Nuclear Arms Control in South Asia,' *Survival* 35 (Autumn) 1993, p. 122-124; Gregory F. Giles and James E. Doyle, 'Indian and Pakistani Views on Nuclear Deterrence,' *Comparative Strategy* 15 1996, pp. 136-138; Jones, p. 113; Nair (1992), pp. 16-17; Paul Dibb, 'The Revolution in Military Affairs and Asian Security,' *Survival* 39 (Winter) 1997-8, p. 100; Devin Hagerty, personal interview, University of Illinois, Champaign-Urbana, 14 November 1996.

capabilities. This partly explains the second PNE decision in 1971-2, the numerous missile launches in the 1980s and 1990s, and the nuclear tests in 1998.

The insecurity created by developments in Pakistan's nuclear capabilities has influenced India's nuclear behaviour in the 1980s and 1990s. Concern over Pakistan's nuclear weapons programme escalated after 1979, when rumours about Islamabad's covert nuclear activities were confirmed. Since that time, New Delhi's nuclear decisionmakers have kept a close eye on strategic developments across the border, signalling India's own nuclear and missile capabilities each time reports or declarations of Pakistan's nuclear activities have reached them. Indeed, India's recent decision to conduct further tests and to weaponise its nuclear option appear to have been driven by insecurity created by Pakistan's demonstration of its missile capabilities - specifically the high profile test-launch of the medium range Ghauri missile in April 1998.

This gives a very general idea of proliferation dynamics in India. It focuses on only one proliferation cause - fear of the strategic capabilities of China and Pakistan, and the desire to balance against them. For this reason, balance of power theory is sometimes criticised because it provides only a limited explanation of nuclear dynamics. In the context of India's nuclear development, it has been argued that balance of power theory cannot explain why India's political leaders did not respond more rapidly to the nuclear threat from China. Documentary evidence indicates that India was aware of China's nuclear and conventional capabilities well before the Lop Nor test in October 1964. Moreover, Bhabha claimed that India would be able to explode a cheap atom bomb underground as early as 1963, and these claims were reinforced by independent sources at the time. So why did it take India so long to demonstrate its own nuclear capabilities? Why was Shastri's 1964 PNE decision reversed in 1966?

Balance of power theory does offer a partial explanation for this behaviour. When faced with a strategic threat to its security, a state will respond by trying to match the military capabilities of the rival, or by allying with a more

powerful state. In India's case, it made economic and strategic sense to acquire a nuclear umbrella from one of the NWS rather than to develop an indigenous nuclear capability. This explains the delay as, during the 1960s, India was committed to the umbrella option. At first, Shastri was determined not to undermine India's policy of non-alignment, which explains the original plan to approach the UK or to acquire a multilateral nuclear guarantee through the UN. However, when these plans failed, Shastri - and later, Indira Gandhi - approached both the United States and the Soviet Union individually. The diplomatic correspondence between New Delhi and Washington reveals that Indira Gandhi was prepared to broker a deal with the United States - a pledge to adhere to a 'no bomb policy' in return for security guarantees and food aid. This provides some insight into the 1966 reversal of the PNE plans - it was part of India's strategy to acquire a nuclear guarantee. However, by 1971-2, India's decisionmakers appear to have accepted that this plan would not succeed. This explains the second decision to push ahead with a PNE. By this stage, the United States had demonstrated its support for Pakistan during the 1971 war, and the Soviet Union had made it clear that it was not prepared to offer anything more than the Friendship Treaty, which lacked a nuclear dimension.

The second problem that critics identify relates to the lack of strategic rationale behind India's nuclear development. If states attempt to balance against the capabilities of their adversaries in order to *increase their security*, then India's nuclear behaviour appears irrational from a strategic perspective. First, India faces a massive geostrategic disadvantage in relation to China. The strategic targets in China are located in the east, and can only be targeted using highly sophisticated missile technology. It is now over 20 years since India conducted its first nuclear test, and New Delhi still appears to lack the delivery capability to target Beijing. Moreover, although plans are currently underway to develop a submarine and submarine-launched missiles to overcome this problem, economic constraints and technological hurdles continue to stand in the way. There has therefore always been the chance that, by developing and demonstrating a nuclear capability, India would actually

undermine its security by presenting itself as an easy target for China. Second, by engaging in balancing behaviour with Beijing, New Delhi risked generating proliferation dynamics in Islamabad, and the emergence of a second hostile nuclear neighbour. Given that Pakistan's conventional military inferiority had been dramatically demonstrated in the 1971 war, and the two states had a history of hostilities, this point would not have been lost on New Delhi's political leaders. In this case, why India risk undermining its strategic security by developing and demonstrating an indigenous nuclear capability?

Balance of power theory does provide a reasonably convincing explanation for this seemingly irrational behaviour: India's political leaders considered the nuclear option to be the only viable one. The alternative was to acquire a nuclear umbrella (a tactic which had already failed), or to join the NPT as a non-nuclear weapon state (NNWS). Whereas India considered the former strategy to be reasonably appealing from a security perspective, it regarded the latter as uninviting. It is possible that, had the NWS offered firm and legally-binding security guarantees in return for a commitment to nuclear nonproliferation, the situation might have been different. However, in 1968, only the United States, the Soviet Union and the UK were prepared to offer any kind of security commitment, and these were neither legally binding nor firm.¹⁷⁵ They pledged negative security assurances (not to use nuclear weapons against a NNWS party to the NPT) but they promised only vague positive security assurances (to 'support' any NNWS party to the NPT).¹⁷⁶ This was not enough to convince New Delhi's nuclear decisionmakers that India's security would be assured in the event of a nuclear threat from China. From their perspective then, the development of an indigenous nuclear capability appeared to be the only available option.

This analysis is reinforced by subsequent developments. New Delhi's approach to the nuclear issue changed dramatically in 1978-9, following

¹⁷⁵ UN Document *S/RES/255*, 19 June 1968, 'Security Council Resolution on Security Assurances.' Text contained in *The United Nations and Nuclear Non-Proliferation* (New York: UN Department of Public Information, 1995), p. 63.

¹⁷⁶ *Ibid.*

China's first formal commitment to a no-first-use policy. At the UN Security Council meeting in June 1978, China pledged 'not to resort to the threat or use of nuclear weapons against the non-nuclear countries and nuclear-free zones' and that 'at no time and in no circumstances will it be the first to use nuclear weapons.'¹⁷⁷ This appears to have eased India's insecurity and, as a result, acted as a brake on India's nuclear ambitions. It also shows the importance of intentions as well as capabilities as determinants of behaviour - India was balancing against the perceived threat from China rather than actual nuclear capabilities. Once China had clarified its intentions, India's insecurity and therefore its desire to engage in balancing behaviour, decreased. Unfortunately, the effects of this development were short lived as, in 1979 and 1983 respectively, rumours of Pakistan's nuclear capabilities and intentions were confirmed. As a result, insecurity mounted again and India's nuclear ambitions received another boost.

India's behaviour does, therefore, appear to have been motivated to a large extent by insecurity and the desire to balance threats. Furthermore, up to a point, this behaviour appears to have had a strategic rationale. That India was aware of the risks involved in its own decision to develop a nuclear capability, is demonstrated by its determination to portray the 1974 nuclear test as a 'peaceful' experiment intended to explore the civil uses of nuclear power, and its commitment to a policy of recessed deterrence. India was trying to 'hedge its bets' - to balance against threats without appearing too threatening. This also explains the constant references to Gandhi's pacifistic philosophy - if India could cultivate a peaceful image, then the strategic, economic and political fallout from its nuclear developments would be minimised. In the light of its failed attempts to secure a nuclear umbrella, and the NWS's weak security assurances, this was the only 'rational' option open to India's nuclear decisionmakers at the time.

The explanation provided by traditional balance of power theory does, however, leave three fundamental questions unanswered. First, if India's

¹⁷⁷ UN Document *A/S-10/AC.1/17*, 7 June 1978, 'Declaration Made by China on Unilateral Security Assurances.' *Ibid.*, p. 123.

nuclear behaviour has been motivated by fear and insecurity and the desire to survive, why was the 1974 PNE conducted at a time when India's strategic environment had improved? Second, since the April 1995 Security Council Resolution has significantly strengthened the security assurances offered by the NWS to the NNWS party to the NPT, why has India continued to pursue an independent nuclear capability, despite mounting pressure from the international community?¹⁷⁸ Third, given that the policy of recessed deterrence was developed to minimise the risks involved in developing a nuclear capability, why did the BJP-led government abandon this nuclear doctrine and declare its intention to weaponise?

Balance of power theory could provide a weak answer to the second and third questions. With regard to the second question, it could be argued that India will not join the NPT due to concerns over relative gains and cheating. Assuming that both India and Pakistan ratified the treaty, India would lose strategic power in relation to China, which is able to retain its nuclear arsenal on the basis that, under the existing conditions of the NPT, its possession of nuclear weapons is legal. This would expose India to an unacceptable threat from its traditional adversary, as China's no-first-use policy is not legally binding.¹⁷⁹ Moreover, if India signed the NPT, it could not be 100 per cent certain that Pakistan would not cheat, leaving New Delhi exposed to

¹⁷⁸ UN Document S/RES/984, 11 April 1995, 'Assurances to Non-Nuclear Weapon States.' Text contained in Sydney D. Bailey and Sam Daws, *The Procedure of the UN Security Council*, 3rd edition (Oxford: Oxford University Press, 1998), pp. 589-591. The NWS promise that '...in case of aggression with nuclear weapons or the threat of such aggression against a non-nuclear-weapon State Party to the Treaty on the Non-Proliferation of Nuclear Weapons, any State may bring the matter immediately to the attention of the Security Council to enable the Council to take urgent action to provide assistance, in accordance with the Charter, to the State victim of an act of, or object of a threat of, such aggression; and recognises also that the nuclear-weapon State permanent members of the Security Council will bring the matter immediately to the attention of the Council and seek Council action to provide, in accordance with the Charter, the necessary assistance to the victim.' The NWS also promised not to use nuclear weapons against any NNWS party to the treaty except in the case of an attack (with any weapons) by that NNWS on the NWS or its allies 'carried out or sustained...in alliance or association with a nuclear-weapon state.' The positive security assurances represent a more strongly worded version of what the United States, the Soviet Union and the United Kingdom promised in 1968, but the negative security assurances from all five of the NPT NWS as part of the Security Council package constitute a major change from what came before. In 1968, there were no negative assurances from any of the NWS. In 1978, the Soviet Union, France, and the United Kingdom offered unilateral security assurances, and China made its first formal no-first use pledge, but none of these were legally binding.

¹⁷⁹ In 1995, China made the same no-first-use pledge as it had in 1978. This represents a unilateral pledge, and is not legally binding. The security assurances presented to the 1995 NPT extension conference were criticised by the NNWS because they thought that these were not legally binding either. George Bunn and Roland Timberbaev, 'Security Assurances to Non-Nuclear-Weapon States: Possible Options for Change,' *PPNN Issue Review* 7 (September) 1996, p. 2.

potential nuclear attacks on two fronts. With regard to the third question, it could be argued that India took the decision to weaponise on the basis of new information, which has exposed the extent of China's nuclear development (following its strategic modernisation programme), and the level of Pakistan's nuclear capabilities (following the test of the Ghauri missile). It could therefore be argued that weaponisation was the logical response to these developments - a necessary move aimed at balancing the newly defined threats.

However, these explanations are not entirely convincing. First, in its advisory opinion to the General Assembly on the legality of nuclear weapons in 1996, the International Court of Justice ruled that the negative security assurances pledged by the NWS *are* legally binding.¹⁸⁰ On this basis, China's unilateral no-first-use pledge may not be legally binding, but if India joined the NPT, it would be protected due to the legally binding multilateral negative security assurances provided by all five NWS in 1995. Second, a number of confidence-building and arms control measures could be introduced to assuage New Delhi's concerns over cheating. Third, Pakistan has strong economic incentives to abandon its nuclear weapons programme and sign the NPT. From Islamabad's perspective, if New Delhi were persuaded to rollback its nuclear programme and join the NPT, many of its longstanding strategic and economic problems would be resolved. Why would Pakistan cheat and, in doing so, risk undermining a long-awaited opportunity? Fourth, whatever India does, it is highly unlikely that it will ever close the gap between its own strategic and technological capabilities and those of China. In weaponising its nuclear option, India will not acquire the capability to target strategic locations in China, so what is the strategic rationale for such a move? Although the most recent security assurances attached to ratification of the NPT are not ideal,¹⁸¹ and there is no

¹⁸⁰ Ibid.

¹⁸¹ A treaty prohibiting the first use of any weapon of mass destruction would offer more security, but there are many obstacles preventing such a treaty. David Gombert, Kenneth Watman and Dean Wilkening, 'Nuclear First Use Revisited,' *Survival* (Autumn) 1995, p. 27; George Bunn, 'Security Assurances Against Nuclear Attack: The Legal Framework for the NPT Extension Conference and Beyond,' in George Bunn, Virginia I Foran, Harald Muller, George Quester, Victor Utgoff and Michael O. Wheeler, *Security Assurances: Implications for the NPT and Beyond* (Washington, DC: Carnegie Endowment, 1995), p. 16.

way of knowing whether China will break its no-first use pledge, surely, from the perspective of strategic security, it would be in India's interests to ratify the NPT? The failure of traditional balance of power theory to provide insight into this behaviour suggests that additional causes have been in play.

3. Structural realism.

More complex versions of balance of power theory can account for the role of additional proliferation causes by disaggregating the concept of power, and by extension, the notion of what constitutes a threat to state security. Although traditional versions of the theory define power in narrow strategic terms, more recent attempts to develop the theory have expanded the concept to include political, economic and societal power. Using this different conceptualisation, it has been argued that states may develop nuclear weapons in response to a wide variety of threats at both the international and domestic levels. This section will assess the advantages of using structural realism - a complex variant of balance of power theory - to provide a theoretical explanation of India's nuclear behaviour.

Structural realism provides the following explanation of nuclear proliferation dynamics. The theory posits that a state's behaviour is determined by changes in relational power (the economic and military capabilities that shape the structural level of the system), and attributive power (the political and societal capabilities that shape the units of the system). In a system ordered by mature anarchy, changes in relational power will release balancing pressures into the system, but states will regard these pressures as threats only if their own levels of relational and attributive power are low. Under these conditions, the interaction capacity of the state will be adversely affected, resulting in international isolation, intense insecurity and, finally, balancing behaviour. Following this line of reasoning, states - or ruling elites - will develop or acquire nuclear weapons when a) an adversary develops a superior military or military and economic capability *and* b) the state - or ruling elite - lacks the political power to compensate for the change in relative capabilities. Under these conditions,

proliferation pressures will be multiplied, and nuclear weapons will be used to perform the dual function of increasing military security and enhancing political power.

Structural realism therefore combines strategic explanations provided by traditional balance of power theory, with insight into the political conditions and motivations that influence nuclear decisionmaking. This allows for a richer interpretation of proliferation dynamics, as predictions and explanations of behaviour can be derived from the nature of the political unit and its domestic political environment, as well as the structure and nature of the international system. As a result it is empirically stronger than more parsimonious alternatives.

This case study shows that, by bringing the state into the analysis, structural realism offers a superior theoretical framework for analysing the drivers of India's nuclear policy.¹⁸² Since independence, India has suffered from low attributive power, caused by a lack of: territorial integrity (due to border disputes with China and Pakistan); social cohesion (due to religious and ethnic divisions); and prestige (due to the colonial legacy). For these reasons, the state is constantly under threat from inside and out. Nuclear weapons have compensated for these weaknesses: first, they have provided a strategic equaliser; second, they have provided prestige. They have therefore been valued for their political - as much as their military - role. This helps explain decisions that appear irrational from a strategic perspective, such as the decisions to conduct nuclear tests in 1974 and 1998, and the decision to weaponise.

Structural realism also derives explanations from the concept of interaction capacity, which can provide additional insight into India's nuclear behaviour. New Delhi has used its nuclear capability to increase its political leverage at what Buzan, Jones and Little refer to as 'the interaction level' (the

¹⁸² Authors who identify low attributive power (though using different terminology) as an important proliferation pressure in India include: Raju G. C. Thomas, 'The Security and Economy of a Reforming India,' in *Asia's International Role in the Post-Cold War Era*. Adelphi Paper 276 (London: IISS, 1992), pp. 71-73; Thomas (1986), p. 45; Stephen P. Cohen, 'The Regional Impact of a Reforming India,' in *Asia's International Role in the Post-Cold War Era*, *op. cit.*, p. 85; Ganguly (1995), pp. 28-29; Robert B. Oakley and Jed C. Snyder, 'Escalating Tensions in South Asia,' *Institute for National Strategic Studies Strategic Forum* 71 (April) 1996, pp. 1-3.

level that joins the unit to the structure of the international system).¹⁸³ This can explain India's stance on the nuclear issue since its inception. Before the 1974 test, India used the nuclear issue to increase its diplomatic bargaining power, declaring its commitment to nonproliferation and its opposition to the nuclear colonialism of the NWS. New Delhi's political leaders hoped that, by rejecting the status quo, they would increase India's chances of establishing itself as leader of the third world. At the same time, India used the threat of developing an indigenous nuclear capability to acquire economic and military assistance from the Soviet Union and the United States, promising to refrain from pursuing the military option in return for concessions. Since the 1974 test, India has continued to use the nuclear issue to increase its political leverage, refusing to accept the double standards of the NWS and, in doing so, making its voice heard on the international stage.

The interesting question is: why has India chosen this particular method of increasing its interaction capacity? India's political leaders could have followed an alternative strategy and joined the NPT. This would have increased the state's interaction capacity by enhancing its societal capabilities - an element of attributive power derived from shared norms and membership of international organisations. To a certain extent, India's refusal to follow this path can be explained using the security imperative: the security assurances offered by the NWS would not provide adequate protection in the event of nuclear threats or attack, and the nonproliferation regime could not guarantee that cheating would not occur. But this excuse is becoming less convincing for reasons already discussed. So how can this behaviour be explained? Why has India favoured higher-risk strategy for increasing its interaction capacity over a lower-risk alternative?

¹⁸³ Those who have used this argument (though, again, not using theoretical terminology) include: Smith, p. 24; K. Subrahmanyam, 'Paths to Nuclear Disarmament,' *United Services Institute Journal* (April-June) 1993, pp. p. 207-208; Brahma Chellaney, 'South Asia's Passage to Nuclear Power,' *International Security* 16 (Summer) 1991, p. 44; V. K. Nair, 'Strategic Compulsions of Deterrence: An Indian Perspective,' *Indian Defence Review* 9 (July) 1994; Naiz Naik, 'South Asia: The Nuclear Scene,' in Darryl Howlett (ed.), *South Asia, Nuclear Energy and Nuclear Non-Proliferation* (Southampton: PPNN, 1994), p. 29; Leonard S. Spector, *Going Nuclear* (MA: Ballinger Publishing, 1987), p. 75; G. S. Bhargava, 'India's Nuclear Policy,' *India Quarterly* 34 (April-June) 1978, p. 143.

The answer to this question lies partly at the domestic level, in the amorphous concepts of state identity and culture. Since independence, India has been dissatisfied with the status quo. Each political administration has legitimised its political power by boldly adhering to a set of political ideals that reflect this general dissatisfaction. India's leading position in the NAM, its rejection of superpower hegemony, and its abhorrence of colonial exploitation and racial discrimination have been major foreign policy goals. Successive administrations have been consistent in their rejection of the NPT on the basis that it undermines these values and goals on which the state has been founded. In legitimising the nuclear arsenals of the NWS and denying all other states the same rights, the NPT has struck at the heart of India's national identity and consciousness. This is a major domestic barrier to any arms control agreements that are deemed to be discriminatory, which helps explain India's seemingly irrational decision to opt for weaponisation rather than nonproliferation in 1998. The decision has followed a period during which the United States has followed its policy of nonproliferation - or 'nuclear apartheid' - with new zeal, focusing its efforts on regional proliferants now that the Cold War is over. For India then, nuclear weapons are a symbol of prestige, and weaponisation the ultimate statement of the state's independence.¹⁸⁴

In taking this approach to the nuclear issue, successive Indian governments have restricted their options.¹⁸⁵ India's nuclear programme consumes scarce resources and yet adds little to the state's military security.

¹⁸⁴ A number of scholars have argued that the rational actor model does not provide a sufficient explanation of India's nuclear decisionmaking, although they have not always framed their arguments in theoretical terms. Most identify the particular ideas and beliefs that have shaped India's nuclear policies in ways that do not necessarily enhance the security of the state. William Walker, 'India's Nuclear Labyrinth,' *The Nonproliferation Review* (Fall) 1996, p. 62; Giri Deshingkar, 'India,' in Eric Arnett (ed.), *Nuclear Weapons After the Comprehensive Test Ban: Implications For Modernisation and Proliferation* (Oxford: Oxford University Press, 1996), pp. 41-53; Ramesh Thakur, 'India: The Next Nuclear Power,' *Pacific Research* 9 (February) 1996, p. 40; Steven Flank, 'Exploding the Black Box: The Historical Sociology of Nuclear Proliferation,' *Security Studies* 3 (Winter) 1993/94; Jain, (1985), p. 89; Lavoy (1993), pp. 199-202; Navnita Chadha, 'Enemy Images: The Media and Indo-Pakistani Tensions,' in Michael Krepon and Amit Sevak (eds.), *Crisis Prevention, Confidence Building, and Reconciliation in South Asia* (New York: St. Martin's Press, 1995).

¹⁸⁵ P. R. Kumaraswamy has detailed the difficulties faced by Narashima Rao during negotiations over the extension of the NPT in 1995. At the time, India was under tremendous pressure from major Western powers to accept the NPT, and strong domestic pressure to sabotage the negotiations. In the end, Rao opted for a 'tacit understanding' with Washington, whereby India would passively facilitate the indefinite and unconditional extension of the NPT, without endorsing it. However, this approach was severely criticised by Rao's domestic opponents. P. R. Kumaraswamy, 'Rationalising Narashima Rao: India and Nuclear Non-Proliferation,' *Asian Studies Review* 20 (July) 1996, p. 149.

However, any government wishing to opt for nuclear rollback or to join the NPT is likely to face serious obstacles due to the long succession of governments that have fused the nuclear issue to the question of prestige and identity. This dilemma is unlikely to be resolved unless: a) the NWS make a serious commitment to nuclear disarmament; b) the NWS accept India as a member of the nuclear club and allow India to join the NPT on this basis; or c) India's national identity undergoes a radical change.

Can structural realism explain these dilemmas? It can provide some insight into the problems associated with formulating nuclear policies that are compatible with both the international and domestic interests of the state. It can also shed light on the desperate measures that states with low attributive power are prepared to take to try and increase their interaction capacity. Furthermore, it can explain why nuclear weapons have been used for this purpose. However, it cannot explain why a state will choose a high-risk strategy to increase its attributive power and its interaction capacity when a lower-risk alternative is available. This is because structural realism is based on the assumption that the primary interest of states in an anarchic international system is to survive. Concepts of identity and culture do not fit easily into the notion of interests, and yet they have had a powerful influence on India's nuclear behaviour and are likely to continue to do so. This does not invalidate the theory, but it does reveal its limits when applied to complex phenomena.

Chapter Four
South Africa's Nuclear Weapons Policy

What is done on behalf of South Africa is done actually on behalf of its white electorate...it is very questionable whether an effective defence of South Africa - that is, of the country's territorial integrity - can ever rest on so narrow a basis.

**Sir John Maude,
British Ambassador to South Africa, 1962.¹**

South African officials claim that the National government developed six gun-type nuclear weapons during an indigenous nuclear programme that began in the 1970s and ended with the dismantling of the devices in 1989. It is impossible to confirm these official reports, as Pretoria's nuclear development was shrouded in secrecy during the apartheid years, and by the time the IAEA was granted access to the Armaments Development and Production Corporation (Armcor) facilities in March 1994, the documents relating to South Africa's nuclear development had been shredded.² However, sufficient evidence remained for the UN and the IAEA to conclude that South Africa had acquired a nuclear capability, and may have been working on advanced nuclear explosives, such as thermonuclear weapons, when the programme was terminated.³ Moreover, the National government's defence doctrine and siege mentality during the 1970s and 1980s, and new evidence regarding the existence of an ambitious biological weapons programme, add credibility to the official South African admission that a nuclear arsenal was indeed constructed, whatever its particular size and characteristics.

This chapter explores South Africa's nuclear weapons programme, identifying the principal pressures and constraints that appear to have influenced Pretoria's nuclear decisionmakers. The first part considers the credibility of the official explanation of Pretoria's motives for developing an independent nuclear

¹ UK Public Records Office (PRO), London: FO 371/161923. Secret letter about South African defence thinking, from John Maud, British Ambassador at the British Embassy, Pretoria, to the Earl of Home, Foreign Office, London, 13 September 1962.

² 'The IAEA Verification in South Africa.' *Gov/INF/698*, 4-5/93, p. 5.

³ United Nations, *South Africa's Nuclear-Tipped Ballistic Missile Capability*. Report of the Secretary General of the United Nations (New York: UN, 1990); David Albright, 'A Curious Conversion,' *The Bulletin of Atomic Scientists* (June) 1993, p. 8.

capability. Once the limitations of the official account have been discussed, parts two to five present a more thorough analysis of the dynamics driving the South African nuclear policies. This highlights both the domestic and international sources of the National government's insecurity, identifies the different stages through which the nuclear weapons programme progressed, traces the evolution of the elite's nuclear strategy, and looks into the role played by key individuals. The final section consists of a theoretical analysis of the South African nuclear experience, showing the extent to which different expositions of neorealism can help explain this particular case of nuclear proliferation.

Part I: The official justification for South Africa's nuclear programme

The official account of the South African nuclear weapons programme provides a starting point for any analysis. It provides a basic outline of the factors that influenced South Africa's nuclear development during the 1970s, and some insight into the unusual nuclear doctrine adopted by Pretoria's political leaders. It will be argued in this chapter, however, that this does not tell much of the story. Although the evidence is sketchy, there are some indications that the official account offers a partial, sanitised interpretation of the conditions and motivations underlying South Africa's nuclear ambitions.

1. Motivations, intentions and doctrine

The official explanation of the White minority government's decision to develop nuclear weapons centres on political and strategic considerations in the 1970s. According to former President de Klerk, the proliferation decision was taken in 1974, stimulated by the Lisbon Coup, which signalled the withdrawal of Portuguese power from Lisbon and Mozambique.⁴ South Africa's insecurity increased as the security situation in Angola deteriorated, and rival national liberation groups there vied for military and political prominence. The most

⁴ Speech by State President F. W. de Klerk, to Parliament, 24 March 1993, 'Regarding the Nuclear Non-proliferation Treaty and Other Matters.' 'The decision to develop this limited capability was taken as early as 1974, against the background of a Soviet expansionist threat in Southern Africa, as well as prevailing uncertainty concerning the designs of the Warsaw Pact members.'

serious threat appeared to come from the Soviet Union and from Cuba, which provided support for the Popular Movement for the Liberation of Angola (MPLA), and which South Africa was afraid threatened its very existence. The government believed that South Africa could not depend on Western support if the Soviet Union attacked its own territory, and therefore took the decision to develop nuclear weapons as a diplomatic tool, not to use against its enemies across the borders, but to put pressure on the United States to provide a security guarantee.⁵ The strategy was based on the following three-stage plan. Phase one: South Africa would maintain uncertainty about the existence of a nuclear capability in the hope that this ambiguity would encourage the United States to intervene if the security situation in South Africa deteriorated. Phase two: if this failed to provoke the desired response from Washington, a confidential indication of South Africa's deterrent capability would be given, increasing the pressure on the United States. Phase three: if this failed to provoke the desired response from Washington, a device would be tested underground, imposing maximum pressure on the United States to rescue South Africa from the communist threat.⁶

South African officials have stated that the government's intention was to produce seven devices, as it was felt that this would permit testing without damaging credibility. Three of the weapons were to be used at the Vastrop test site, and the remainder were intended as back-ups in the event of a test failure and for demonstrating the existence of a stockpile.⁷ Apparently, the first full-scale device was completed in 1977. A second, smaller device was built in 1978, and was the first to be provided with highly enriched uranium (HEU) in November 1979. From that point onwards the weapons were built at a rate of less than one per year, and as a result only six of the planned stockpile of seven devices had

⁵ Ibid.

⁶ Waldo Stumpf (Chief Executive Officer of the Atomic Energy Corporation of South Africa), 'South Africa's Limited Nuclear Deterrent Programme and the Dismantling Thereof Prior to South Africa's Accession to the Nuclear Non-proliferation Treaty.' Speech at the South African Embassy, Washington, DC, 23 July 1993.

⁷ T. F. Wheeler, 'Criss-crossing the Nuclear Threshold: The South African Experience.' Address to the West-West Agenda, South Africa Department of Foreign Affairs, Washington, DC, 4 October 1994.

been manufactured by 1989, when the programme was terminated.⁸ According to Waldo Stumpf, Chief Executive Officer of South Africa's Atomic Energy Corporation (AEC), the device chosen - a gun assembly design - was an unsophisticated device similar to the weapon dropped on Hiroshima in 1945.⁹ This technical information reinforces the official explanation of South Africa's strategy of limited deterrence, as a gun-type device is cheaper and easier to produce than a deliverable weapon, and would have provided South Africa with the diplomatic tool that it required.¹⁰ De Klerk has stressed on numerous occasions since 1993, that the government never had any intention of actually using these devices, and that no advanced explosives, such as advanced thermo-nuclear explosives, were manufactured.¹¹

2. Reactions to the official account

In the absence of accessible and reliable documentary evidence which would either confirm or undermine this account, both academics and policymakers have, with a few exceptions, opted to accept the official explanation of South Africa's nuclear capability, as well as its motivations and intentions.¹² Pretoria is seen to have responded to the Soviet threat by playing the power politics game, attempting to overcome its international isolation using nuclear blackmail. The term 'catalytic deterrence' has been developed to distinguish this political form of nuclear deterrence from traditional strategic deterrence.¹³ This term emphasises the original nature of South Africa's nuclear deterrent doctrine, whilst acknowledging the underlying systemic pressures that were driving nuclear policy. Analysts that take this view tend to stress the absence of a strategic incentive for South Africa to develop nuclear weapons. They note South Africa's

⁸ *Financial Times*, 20 May 1993.

⁹ Stumpf, 23 July 1993.

¹⁰ *Ibid.*

¹¹ De Klerk, 24 March 1993.

¹² See Darryl Howlett and John Simpson, 'Nuclearisation and Denuclearisation in South Africa,' *Survival* 35 (Autumn) 1993, pp. 154-173; Richard K. Betts, 'A Diplomatic Bomb for South Africa?' *International Security* 4 (Fall) 1979; Steve Chan, 'Incentives for Nuclear Proliferation: The Case of International Pariahs,' *Journal of Strategic Studies* 3 (May) 1980; Denis Venter, 'South Africa and the International Controversy Surrounding its Nuclear Capability,' *Politikon* (Pretoria) 5 (i) 1978; David Fischer, 'South Africa,' in Harald Muller (ed.), *A European Non-proliferation Policy* (Oxford: Clarendon Press, 1987); and Fischer, 'South Africa,' in Reiss and Litwak, *op. cit.*

¹³ Howlett and Simpson, pp. 158-159.

overwhelming conventional superiority over its adversaries in Africa, and question the logic of the military use of nuclear weapons in its own back yard. This argument certainly corresponds with the official explanation of South Africa's nuclear weapons programme, as it focuses on the external threat, diverts attention away from Pretoria's growing internal crisis, and rationalises and justifies the government's response to systemic pressures.

3. Evidence of post-hoc rationalisation?

There are, however, problems with the official explanation, ranging from inconsistencies to possible misinformation. First, whilst all South African officials have clearly stated that South Africa's deteriorating security situation resulted in a shift from peaceful nuclear explosives to 'catalytic deterrence,' different officials have given different accounts of when this shift took place. For example, President de Klerk, Wynand de Villiers (former executive chairman of the AEC) and T. F. Wheeler (Chief Director of the Multilateral Branch, South Africa Department of Foreign Affairs), have all stated that the shift occurred in 1974, in response to the Portuguese withdrawal from Angola.¹⁴ In contrast, Waldo Stumpf has asserted that the shift occurred in 1977, and that the Prime Minister's formal approval of the deterrent strategy came only in April 1978.¹⁵ According to Stumpf's explanation of events, the idea of using nuclear weapons as a diplomatic bomb was stimulated by the U.S. reaction to news that Soviet surveillance satellites had detected preparations for a peaceful nuclear explosion in the Kalahari in August 1977.¹⁶

This inconsistency partly reflects the nature of nuclear development. It is misleading to suggest that one significant proliferation decision is taken - a number of proliferation decisions are taken over many years. Stumpf was probably referring to a decision further up the proliferation ladder. However, in contrast to the official account, this chapter argues that significant proliferation

¹⁴ De Klerk, 24 March 1993; Wheeler, 4 October 1994.

¹⁵ David Albright makes this point in his report. David Albright, 'South Africa's Secret Nuclear Weapons,' *ISIS Report* (May) 1994.

¹⁶ Stumpf, 23 July 1993.

decisions were also taken *before* 1974. Documents released in 1997 show that, from the early 1960s, the National government believed that Soviet-led, Black liberation forces would attack South Africa and end White minority rule.¹⁷ According to official sources, Pretoria's defence establishment believed that this military onslaught would be supported by the Black majority within South Africa, making it virtually impossible for the apartheid state to survive. In addition, it was widely believed that this crisis would coincide with the withdrawal of Portuguese colonial rule from Angola and Mozambique, which Pretoria's political leaders expected to occur at any time from the late-1960s onwards. Preparations were being made for this eventuality throughout the 1960s and early 1970s, including plans for an indigenous nuclear capability. Whereas the official account of South Africa's nuclear programme describes a sudden, knee-jerk reaction to regional events in 1974, the evidence indicates that this was not the case.

Another problem with the official account stems from de Klerk's March 1993 announcement, in which he declared that 'at no time did South Africa acquire nuclear weapons technology or materials from another country, nor has it provided any to any other country, or cooperated with another country in this regard.'¹⁸ This chapter will show that this statement is open to question. In the same announcement, de Klerk stated that 'no advanced nuclear explosives, such as thermo-nuclear explosives, were manufactured.'¹⁹ Although there is no evidence to suggest that South Africa actually *manufactured* anything other than the crude gun-type devices, a special UN investigation in 1990, and subsequent IAEA inspections revealed that the scientists at Advena had been working on thermo-nuclear weapons, miniature devices and advanced delivery systems, such as ballistic missiles, before the programme was terminated.²⁰ It is possible that the scientists took matters into their own hands and took the nuclear

¹⁷ These documents are cited and discussed in detail in Part II of this chapter.

¹⁸ De Klerk, 24 March 1993.

¹⁹ *Ibid.*

²⁰ United Nations, *South Africa's Nuclear-tipped Ballistic Missile Capability*, Zondi Masiza, 'A Chronology of South Africa's Nuclear Programme,' *The Nonproliferation Review* 1 (Fall) 1993, p. 40 and 46; Albright (1993), p. 8.

research further than South Africa's political leaders intended, but as this case study will show, this argument is not entirely convincing.

South African officials involved in the nuclear programme had strong incentives to mislead South Africans and the rest of the world over the National government's nuclear intentions. The claim that the White minority government only developed an unsophisticated diplomatic bomb, which it never intended to use against any target either inside or outside South Africa's borders, has the obvious advantage of smoothing over relations with South Africa's newly enfranchised citizens, its neighbours, and with the international community. Any premeditated plans to massage the truth were facilitated by the destruction, by Armscor and the AEC, of all design information and other documentation of proliferation concern between January and March 1993.²¹

It is possible that the official account was based on a post-hoc rationalisation of events - what is known as 'logic reconstructed.' The Harare Report gives some indication that this may have been the case. The document was drawn up by the staff of the Programme for Promoting Nuclear Non-proliferation (PPNN) at the International Workshop on Africa and Nuclear Non-proliferation, held in Harare in April 1993.²² It is broadly based on an oral presentation given by Stumpf at that meeting, which members of the PPNN later compiled into a report. Members of the PPNN were surprised at the speed with which the report was absorbed by South African officials, and by the fact that the PPNN's own rationalisation of events came to be seen as 'fact.' In reality the report had been rather loosely based on Stumpf's statements - any gaps were filled in with information that appeared 'logically' to fit the rest of the statement.

²¹ 'The IAEA Verification in South Africa.' *Gov/INF/698*, 4-5/93, p.5. Stumpf has claimed that the IAEA would have been granted access to the former Armscor facilities, and to all information of proliferation concern, if access been requested before de Klerk's public acknowledgement of the past nuclear deterrent programme. However, according to Stumpf, the IAEA made such a request only after 24 March 1994, by which time all the documents had been shredded. In contrast, an IAEA spokesman has claimed that the invitation to examine the records was only received *after* the majority of the evidence had been disposed of. Waldo Stumpf, 'The Accession of a "Threshold State" to the NPT: The South African Experience.' Presentation given at the Conference on Nuclear Non-proliferation: The Challenge of a New Era. Organised by the Carnegie Endowment for International Peace, Washington, DC, 17-18 November 1993; *Daily Telegraph*, 26 March 1993, p. 14.

²² Emily Bailey, Darryl Howlett, and John Simpson, 'Events Preceding South Africa's Accession to the NPT on 10 July 1991.' Notes taken at the PPNN Workshop on South Africa's nuclear deterrent programme and nonproliferation policy, Zimbabwe, 2-4 April, 1993.

This incident makes the official account look like post-hoc rationalisation - a sanitised, politically acceptable, academically credible version of events. Whether or not this was actually the case is open to question.

Part II: The peaceful nuclear programme, 1948-65

Rather than focusing exclusively on events in the 1970s, as the official account does, it is more helpful to view South Africa's nuclear development in the context of the National government's foreign and domestic policy goals in the 1950s and 1960s. The documents discussed in this section will show that, during this period, the National government believed severe internal and external threats were undermining its chances of survival. The spread of Black nationalism threatened to create social and political upheaval in southern Africa. As the nationalist movement grew, White minority rule lost the credibility and legitimacy that it had once claimed, leaving Pretoria's White leadership increasingly vulnerable to attack from inside and outside its borders. In addition, the National government believed that communism was threatening to overrun the African continent, using the forces of Black nationalism to undermine capitalism. Pretoria's decisionmakers viewed the existence of the Portuguese colonies of Angola and Mozambique as a buffer against the forces in the north, but they were unsure how long this protective zone would survive. The foreign and domestic policies of successive administrations were therefore geared to reducing these threats and maintaining the position of the minority.

This combination of external threats and internal vulnerabilities created powerful proliferation incentives in South Africa. However, although the South African nuclear programme began in earnest during this period, the available evidence indicates that the National government was primarily interested in its civil uses. There are two reasons why the military dimension of the nuclear programme was not developed at this stage. First, throughout the 1950s, the White minority was confident that South Africa would secure a nuclear umbrella from the United States, in which case, the development of an indigenous nuclear capability would be unnecessary. Second, once Washington

and the West showed that it was not prepared to cater to the needs of the apartheid state, South Africa's decisionmakers focused on creating strong conventional capabilities to deal with the immediate threat. By the mid-1960s, the possibility of developing a nuclear capability was under consideration, but there is no evidence to suggest that plans were underway.

1. The National government and apartheid.

South Africa's nuclear development can only be understood if it is placed in historical perspective. In 1948 the National Party, the major party of Afrikaners, came to power in South Africa on its platform of apartheid. After the election, the Malan administration initiated a series of apartheid measures designed to consolidate Afrikaner support and ensure White supremacy. As a result of the rapid growth of apartheid legislation, spontaneous racial violence and the rise of organised non-white resistance presented the new government with a precarious internal security situation. During the 1950s internal security remained the government's main concern as the African National Congress (ANC) organised resistance to White minority rule, coordinating a campaign of boycotts, strikes and civil disobedience. The government responded by enlarging the police force, and by imposing a series of draconian regulations that increased the power of the state, temporarily crushing the organised resistance by 1965.²³

2. Atoms for peace

During this period, the Malan, Strijdom and Verwoerd administrations worked on building South Africa's peaceful nuclear programme. Prime Minister Malan was able to take advantage of former Prime Minister, Jan C. Smuts' survey, which had revealed large deposits of low-grade uranium ore in 1944. Within seven years of the National Party coming to power, 16 mines had been set up to provide uranium for export.²⁴ In exchange for uranium exports to the United States and Britain, South Africa acquired technical expertise, and in 1949 the

²³ Robert Jaster, *South Africa's Narrowing Security Options*. Adelphi Paper No. 159 (London: IISS, 1980), pp. 2-9.

²⁴ Masiza, p.34.

AEC was established to capitalise on this exchange.²⁵ In 1957, under the aegis of the “Atoms for Peace” programme, South Africa and the United States signed a bi-lateral 50-year agreement for nuclear collaboration. Under this agreement, South Africa acquired its first research reactor, Safari I, as well as highly-enriched fuel, which Washington agreed to deliver at intervals.²⁶ During this period South Africa became a founder member of the IAEA, and signed a ‘civil uses’ agreement with the United States. There were no indications that Pretoria was interested in the military application of nuclear technology at this stage, and symbolic of the trust that the South African government was able to win during this early period of its nuclear development, South Africa was invited to jointly monitor U.S. nuclear weapons tests in the South Atlantic.²⁷

3. Membership of a Western military alliance?

During the 1950s, Black nationalism spread across Africa. The South African leadership suspected that the nationalist movement was part of a communist strategy to wrest Africa from Western control. However, the Malan and Strijdom administrations believed that they could depend on Western support in the event of a communist onslaught. It appeared logical to them that the West would regard them as a valuable ally against the Soviet threat, and so their over-riding objective was to gain admission to a Western military alliance, and in doing so, commit the Western powers to the defence of South Africa. The government had grounds for optimism, judging by the level of cooperation offered by the United States and Britain in Pretoria’s bid for nuclear power. The extent of South Africa’s faith in this strategy, and its low threat perception, is revealed by the minimal action taken to enhance South Africa’s national defence capabilities.

²⁵ During the late 1950s and early 1960s, the United States and the United Kingdom both played a major role in training scientists from South Africa. In the words of Dr. A. J. A. Roux, former president of the South African Atomic Energy Board (AEB), ‘we can ascribe our degree of advancement today in large measure to the training and assistance so willingly provided by the United States of America during the early years of our nuclear program, when several of the Western world’s nations co-operated in initiating our scientists and engineers into nuclear science.’ See the report by the Secretary General of the United Nations, *South Africa’s Plan and Capability in the Nuclear Field*. Study Series 2 (New York: UN, 1980), pp. 14-15; Raimo Vayrynen, South Africa: A Coming Nuclear Power? *Instant Research on Peace and Solence* 7 1977, p. 41.

²⁶ Masiza, p. 35.

²⁷ Renfrew Christie, ‘South Africa’s Nuclear History.’ Paper presented at the Nuclear History Program, Fourth International Conference, Sofia-Antipolis, Nice, France, 23-27 June 1993, p. 15.

Between 1948 and 1960, for example, no new military equipment of any significance was acquired by the army or the airforce, except for the centurion tanks and sabre aircraft bought in 1955 as a consequence of South Africa's commitment to the abortive Middle East Defence Organisation.²⁸

4. Increasing isolation, 1960-63

By the early 1960s, it became clear to Prime Minister Verwoerd that South Africa could not count on help from the West, and that U.S. and British cooperation in the nuclear field had been motivated by their desire to acquire South African uranium, and not by a genuine commitment to the Afrikaner government. In 1960, Pretoria felt a bitter blow when the United States supported a UN Security Council Resolution that apartheid might endanger world peace and security. To add insult to injury, in April 1961 South Africa was forced to leave the Commonwealth as a punishment for its policy of apartheid. This drastically reduced Pretoria's potential allies and ended what had been viewed by the National government as a valuable 'alliance' with Britain.²⁹ In the same year South Africa also failed to obtain a non-permanent seat on the UN Security Council - in 1959 Britain had pledged to back the South African bid, but withdrew its support after the 1960 Sharpeville massacre. 1963 saw the international reaction to Pretoria's inhumane and repressive policies intensify, as the Western states started to vote against South Africa in the UN. The following year, both the United States and the UK subscribed to a UN arms embargo.

These developments served to reinforce South Africa's alienation, which, as far as Pretoria's decisionmakers were concerned, was complete by 1962. The Defence Minister's speech, given during the annual senate debate on defence in March 1962, reveals the level of vulnerability that South Africa felt due to its international isolation. The Defence Minister, Fouche, outlined both the internal and external threats faced by the National government at the time, and stated categorically that 'if South Africa were attacked tomorrow she would have

²⁸ Jaster (1980), p. 9.

²⁹ UK PRO, London: FO 371/161923.

to stand alone.³⁰ According to Foreign Office officials in London, South Africa's political leaders were beginning to panic as a result 'seeing ghosts all around them...an inevitable consequence of their increasing isolation.'³¹

5. Black nationalism and the communist threat

The 'ghosts' consisted primarily of Black nationalists and communists. In the senate debate on defence, Fouché stated that 'trained communists have already penetrated every field in many African states,' and this 'was being followed by economic, technical and military help in the form of loans, capital goods, weapons and so-called technicians.'³² He added that 'during the past year, as part of the Cold War, military equipment had been provided to seven African states' providing the potential for 'the establishment of an army of liberation.'³³

These fears were not limited to the political elite in South Africa. Officials at the British Embassy in Pretoria believed that such liberation forces could be expected to receive considerable, even spectacular, aid from the communist bloc, as 'the Russians would have a strong political incentive to appear to lead the pack against the last redoubt of White imperialism in Africa.'³⁴ The rewards for such action would be substantial: the installation of a communist regime in the strongest and richest state south of the Sahara. British diplomats also described the widespread fear of communist and nationalist onslaught shared by White minority public opinion. A military attack on the Republic was considered inevitable, sooner or later, and foreign observers feared that the South African government might 'feel compelled to use its defence forces in ways which were militarily unsound, with an eye primarily to the morale of its White supporters.'³⁵

³⁰ UK PRO, London: FO 371/161922. Confidential letter about the senate debate on defence from Peter Lewis, British Embassy, Cape Town to Tom Aston, West and Central Africa Department, Foreign Office, London. 16 March 1962.

³¹ UK PRO, London: FO 371/161923. This is quoted from substantial internal Foreign Office notes recorded under the 'minutes' section of the document.

³² UK PRO, London: FO 371/161922. Summary based on reports in *Cape Times* and *Cape Argus*, 12 and 13 March 1962.

³³ *Ibid.*

³⁴ UK PRO, London: FO 371/161923.

³⁵ *Ibid.*

Events in 1964 showed that the National government was desperate to find allies and to prove itself a valuable member of an anti-Soviet pact. The curious Russian trawler incident illustrates this point. In November 1964, South Africa discovered a number of Russian trawlers fishing in South West African waters during the 'off season.' Half of the South African navy was mobilised to search the Russians vessels, in an incident that the British suspected had more to do with strategic vulnerabilities than fishing rights.³⁶ At the time, it was rumoured that the Russian trawlers had been fitted with equipment which could be used for tracking U.S. missiles in the South Atlantic, and that South Africa had used their presence in South African waters as an excuse to assert Pretoria's role in Western strategic defence.

Additional evidence suggests that South Africa was also making more direct calls for help from Britain. Fear of a communist plot against Pretoria was reaching almost paranoid levels by 1965, with the South African Department of Foreign Affairs pleading with the British Ambassador in Pretoria to inform the Foreign Office about 'the communist influence in Basutoland in which both Peking and Moscow were involved.'³⁷ According to the British Ambassador, 'not only was the government seriously concerned but also public opinion, and the government was going to be approached with the question of what they were doing about it.'

6. Military expansion

An ambitious new defence programme was implemented in response to this situation. A Bill was rushed through parliament creating the Munitions Production Board with sweeping authority to enter agreements, at home or abroad, for the development, manufacture or supply of any sort of weapons or munitions.³⁸ Orders were placed for new submarines and aircraft, and the armed

³⁶ UK PRO, London: FO 371/177111. Confidential letter about the Russian trawler incident from J. N. Elam at the British Embassy, Pretoria, to C.J.M. Edwards at the Foreign Office, London, 20 November 1964.

³⁷ UK PRO, London: FO 371/177061. Confidential inward telegramme from the British Ambassador in Pretoria to C. M. Edwards, Secretary of State for the Colonies, Foreign Office, London, 25 November 1964.

³⁸ Christie, p. 15.



forces were rapidly expanded. The Air Force was re-equipped to face an external threat, with orders placed for supersonic jet fighters, heavy transport aircraft, strike bombers, helicopters and a radar air defence system covering the Rand/Pretoria area.³⁹ Air-to-air missiles were also ordered, and the acquisition of ground-to-air missiles contemplated.⁴⁰ Plans were also made to expand the navy to 30 vessels, including three new anti-submarine frigates and two destroyers converted to carry helicopters. Massive recruitment and retraining of military personnel was also planned. By 1964 almost 20,000 national servicemen were in training, compared to the 2000 in training in 1960.⁴¹ Perhaps the most significant development during this period was the decision in 1962 to establish a Council for Defence Research (CDR). South Africa's withdrawal from the Commonwealth cut off the country's main source of information about developments in defence research. Fouché declared that, in the medium to long-term, this disadvantage could be overcome, thanks to the existence of 'scientists of stature' within South Africa. The CDR was therefore set up to direct the efforts of these scientists, and to move towards self-sufficiency in sophisticated military technologies.⁴²

Part III: South Africa's nuclear weapons programme emerges, 1965-1978

The government's failure to secure a nuclear umbrella resulted in a change of strategy, from economic, political and strategic cooperation to nuclear blackmail. Between 1965 and 1968, the idea of developing an indigenous nuclear capability was explored, and from 1968-78, steps were taken to develop a small nuclear arsenal to increase the pressure on the United States to admit South Africa into a Western security alliance. Proliferation momentum increased as the internal and external threats mounted. The most significant of these was the loss, in 1974, of Angola and Mozambique as buffers against African nationalism and communism, and the Soweto riots in 1976.

³⁹ UK PRO, London: FO 371/161923.

⁴⁰ *Ibid.*

⁴¹ Christie, pp. 13-14.

⁴² UK PRO, London: FO 371/161922.

1. The laager tightens

In the mid-1960s, the National government began to retreat into an ideological, nationalist shell known as the 'laager.'⁴³ White public opinion followed suit.⁴⁴ Internal insecurities compounded the problem, encouraging a shift towards conservatism amongst the White minority.⁴⁵ The National government was the only beneficiary of this shift on the domestic political front. The government's popularity amongst White South Africans increased dramatically during the 1960s, while support for the political opposition declined sharply. The United Party, which placed dignity and individual freedom above the state and sought to achieve unity of the races, could no longer mount an effective campaign against a government that enjoyed the confidence of a loyal electorate.⁴⁶ Moreover, the influence of the remaining White political parties - the Liberal and Progressive Parties - virtually disappeared.⁴⁷ The meagre support that these parties managed to retain was apparently 'unmercifully harassed by the government as traitors to the White Cause.'⁴⁸ This combination of right-wing nationalism, apartheid, and international isolation were described in 1965 by the Canadian Ambassador to South Africa as 'a time bomb waiting to go off.'⁴⁹ He predicted that the bomb would explode when South Africa's 'neighbouring countries are under African governments.'⁵⁰

As the laager mentality hardened, British diplomats and defence experts reported an 'air of unreality' surrounding the National government's foreign and defence policies. In a letter to the Foreign Office, Sir John Maud,

⁴³ The term laager originated from the time of the Boer pioneers. It was used to describe the circle of covered wagons that served as a fort from which the Boer pioneers beat off native attacks as they trekked into the interior. The term is now often used to refer to the siege mentality of the South African Whites during apartheid. Fischer, 'South Africa,' in Reiss and Litwak, *op. cit.*, p. 230.

⁴⁴ UK PRO, London: FO 371/182073. Confidential letter enclosing a report about the internal security situation in South Africa, entitled 'Farewell to South Africa,' from E.G. Lee, Canada House to J. Wilson, West and Central African Department, Foreign Office, London, 29 July 1965.

⁴⁵ *Ibid.*

⁴⁶ *Ibid.*

⁴⁷ Apparently, both parties were turned to briefly after the Sharpeville massacre, but, as the shock wore off, voters turned away again. The Liberals and Progressives polled only 10 per cent of the votes in the 1961 election and, as the decade wore on, this meagre showing declined further. As a result, the Liberal Party had no parliamentary member, and the Progressive Party only one. *Ibid.*

⁴⁸ *Ibid.*

⁴⁹ Quoted from the report 'A Farewell to South Africa.' *Ibid.*

⁵⁰ *Ibid.*

British Ambassador to South Africa, warned that the government's foreign policy 'lacked coherence' and predicted that it would undermine the security of the state if, as was expected, Angola and Mozambique gained independence. He argued that Pretoria's decisionmakers should develop constructive economic and political relations with their neighbours, and implement a programme of domestic reform in an effort to improve the region's chances of future stability. In Maud's opinion, the talk of the communist threat and the expansion of Pretoria's military 'never seemed to make much sense, except perhaps in terms of propaganda for home consumption.'⁵¹

2. Communist onslaught and the NPT 'conspiracy'

The paranoia associated with the laager mentality intensified following the appointment of P. W. Botha to the position of Defence Minister in 1965. On assuming his post he presented a revised analysis of the internal and external threats faced by the White minority government. He believed that South Africa was entering a second phase of a communist onslaught. According to Botha, the first phase had been to create internal unrest in South Africa by advocating racial equality, but this tactic had failed due to the inability of the communists to overcome the repressive legislation introduced by the National Party between 1948 and 1965. However, the second phase of the onslaught would create a greater threat, as the Soviet Union would now adopt an 'imperialistic and militaristic policy,' aiming to instigate local wars across South Africa's borders and to provide the arms and the personnel to sustain them.⁵² This notion of a

⁵¹ UK PRO, London: FO 371/161923. One of the minutes refers to 'the numerous oddities and incongruities of South Africa's present defence policy.' Another points out that the expansion of Pretoria's military 'never seemed to make much sense, except perhaps in terms of propaganda for home consumption.' The report itself claims that 'the scale of the South African defence effort and the resources devoted to it are quite impressive. But when one looks for some coherent defence policy underlying the South African Government's conduct of its foreign relations as well as its military preparedness, the result is less satisfactory...the greatest defect of all arises from the inability of the regime, because of the racial policies to which it is committed, to have any attitude other than one of hostile immobility towards independent African states individually or collectively. The result is to unite and consolidate opposition which could otherwise probably be divided, and to leave little or no scope for the exercise of diplomacy or even for the gathering of intelligence. The South African defence planning, for all its apparent purposefulness, has an air of unreality about it which is likely to become increasingly evident if events to the north develop to South Africa's disadvantage.'

⁵² James Barber and John Barratt, *South Africa's Foreign Policy: The Search for Status and Security, 1945-1988* (Cambridge: Cambridge University Press, 1990).

It is interesting to note that, during this period, South African trade with the communist bloc declined dramatically. For example, between December 1964 and December 1965 South African imports from the USSR declined from R1,052,804

communist conspiracy against South Africa helped the White minority government come to terms with the increasing African pressure for an international confrontation with the Verwoerd regime.⁵³

Botha emphasised that South Africa would not be able to cope with the communist threat alone, and argued that it was imperative that a nuclear umbrella should be provided by the West. However, although the United States was prepared to continue supplying Pretoria with enriched uranium during this period, Washington was not prepared to undermine its own international position by providing the unpopular apartheid government with a formal security guarantee.⁵⁴ The South African response to this lack of commitment can be seen during negotiations over the NPT. At the UN General Assembly in May 1968, the South African representative explained Pretoria's decision not to sign the treaty. He declared that 'we are offered security assurances in the context of Security Council actions...but it is neither a guarantee, nor does it represent a firm assurance that the security of a particular country subject to a nuclear threat or attack will be preserved.'⁵⁵

3. The drive for an independent nuclear capability

While it was unsuccessfully seeking a nuclear umbrella from the United States, it appears that the Verwoerd administration was beginning to weigh up the costs and benefits of an independent nuclear capability for South Africa. It is possible that ideas about the feasibility of developing a nuclear deterrent were stimulated in part by news that the Safari 1 reactor had gone critical in 1964.⁵⁶ In February

to R193,757. Across the board, imports - and some exports - from the eastern bloc countries were drastically cut. Further cuts followed in 1966. It is possible that this trend continued throughout the decade, but the figures have yet to be released. However, the available data indicates that Pretoria wished to limit contact with the eastern bloc. UK PRO, London: FO 371/188091. Unclassified telegram about South African trade with the communist bloc from W.J. Rumble, commercial section of the British Embassy, Pretoria to the West and Central African Department of the Foreign Office, London, 28 October 1966.

⁵³ A secret report, drawn up in May 1967 by the CIA, entitled 'South Africa's New Foreign Policy Offensive,' shows that the U.S. government was being pressured by African governments into a 'showdown with Pretoria.' John Christopher Alden, *The South African State and Reform Apartheid: Processes of Change in State Strategy Under P.W. Botha*. Unpublished Ph.D. Thesis, Fletcher School of Law and Diplomacy, January 1993, p. 40.

⁵⁴ Later in the same report, the CIA reveals that the United States was not prepared to take any action against the apartheid government, due to important trading commitments, but at the same time stresses the need for Washington to distance itself from Pretoria in the public domain. Ibid.

⁵⁵ United Nations, General Assembly, A/C.1/PV.1571, 20 May 1968.

⁵⁶ IAEA, *Directory of Nuclear Reactors*, volume 1 (Vienna: IAEA, 1964), p. 95.

1965, Dr. Andreis Visser, a member of the Atomic Energy Board (AEB) urged that South Africa should acquire a nuclear arsenal, not only for 'prestige purposes,' but also because 'we should have such a bomb to prevent aggression from loud-mouthed Afro-Asiatic states.'⁵⁷ In the same interview he stressed that 'money is no problem, the capital for such a bomb is available.'⁵⁸ In August, at the official inauguration of the Safari 1 reactor, Verwoerd stated that it was the duty of South Africa to 'consider the military uses of the material.'⁵⁹ Though these comments suggest that the government was beginning to contemplate a nuclear option, there is no evidence to suggest that any concrete moves were made to start work on a nuclear weapons programme at this stage.

The first serious moves to develop a nuclear capability were made under the Vorster administration.⁶⁰ In 1968, a three-man committee under the chairmanship of Dr. van Eck of the Industrial Development Corporation of South Africa proposed that South Africa should develop its own uranium enrichment process and recommended the financing of a pilot plant. A year later, South African scientists, Dr. H. J. van der Linde, Dr. W. E. Stumpf and R. J. Schmitt, began special training at the nuclear research centre in Karlsruhe in the Federal Republic of Germany (FRG), where they took part in West German efforts to develop a jet-nozzle enrichment process.⁶¹ By July 1970, Prime Minister Vorster was able to announce the South African 'discovery' of a new process for the enrichment of uranium.⁶² As a result, the Uranium Enrichment Corporation (UEC)

⁵⁷ *New York Times*, 28 February 1965.

⁵⁸ *Ibid.*

⁵⁹ *South African Digest*, 13 August 1965. Cited by T. Ohlson, 'The Apartheid Nuclear Deterrent: Background, Rationale and Strategic Significance.' Unpublished paper, Centre for African Studies, Eduardo Mondlane University, May 1988, pp. 3-4.

⁶⁰ British impressions of Balthazar Johannes Vorster (commonly known as John Vorster) were not complementary. He was regarded by diplomats at the British embassy in Cape Town as a 'pretty nasty bit of work.' In a telegram sent to the Foreign office, a British official provided a character sketch of the new Prime Minister, describing him as 'a dangerous and subversive character' who 'though not inhuman' had 'not escaped the corrupting influence of unfettered power.' He also pointed out that Vorster had no experience of life outside South Africa, and that he and his wife were the ultimate inward-looking Afrikaners, which did not bode well for South Africa's foreign policy. To conclude, he added that the 'prospects here of a more equitable and humane society have deteriorated as a result of Dr. Verwoerd's death.' UK PRO, London: FO 371/177061. Confidential telegram on the new Prime Minister's personality and background, from J. Wilson at the British Embassy, Cape Town to the West and Central African Department at the Foreign Office, London, 16 September 1966.

⁶¹ Vayrynen, p. 39.

⁶² B. J. Vorster, *House of Assembly Debates*, vol. 25, column 5, 7 and 8. Later, in 1974, Vorster admitted that the South African enrichment process was developed with the help of 'friendly industrial nations' including the Federal Republic of Germany. A U.S. cable speculated at the time that South Africa may also have received help from Japan. U.S. NSA, Washington, DC: *Limited official use cable #01836*, from the U.S. Embassy, South Africa, to the DOS, 1 May 1974.

was established in 1970, and the AEC began a new enrichment project, which would eventually result in the construction of the Y Plant at Valindaba.⁶³ According to Refrew Christie, a South African scientist whose research into Pretoria's nuclear activities led him into conflict with the authorities, 'the Y Plant was always intended to enrich uranium for nuclear weapons.'⁶⁴ His claim is given a certain amount of credibility by the developments that immediately followed the decision to begin work on the enrichment plant. In March 1971, less than a year after this decision was taken, the South African Minister of Mines, Carl de Wet, approved research to begin on PNEs and the AEC was put in charge of this research.⁶⁵ In 1972, the AEB drew up a classified report, in which several maps indicate areas that would be seismologically 'safe' for exploding nuclear devices.⁶⁶

Threats to the security of the Afrikaner elite continued to grow during the early 1970s. Speeches in 1971 and 1972, by Defence Minister P. W. Botha and Admiral Bierman, the Commandant-General of the South African Defence Force (SADF), show an increasingly desperate fear of communist onslaught.⁶⁷ These fears were greatly exacerbated by the Lisbon coup of April 1974, which brought an end to the Portuguese Empire. Suddenly, South Africa lost the protection of Angola and Mozambique as buffer zones against Black African nationalism and Marxism. Vorster reacted to this development in two ways. First, he announced that South Africa's pilot uranium enrichment plant at Valindaba was nearing completion, signalling Pretoria's emerging nuclear capability to both the United States and to South Africa's newly independent neighbours.⁶⁸ Second, he put pressure on the United States to amend the Atomic Energy Agreement in order to enable South Africa to purchase additional

⁶³ Masiza, p. 35.

⁶⁴ Christie, p. 39.

⁶⁵ Mark Hibbs has suggested that this should be seen as the turning point in the South African nuclear programme, when work on developing a nuclear weapons capability began in earnest. He therefore considers the turning point to have occurred a year later than Christie suggests. See Mark Hibbs, 'South Africa's Secret Nuclear Programme: From PNE to a Deterrent,' *Nuclear Fuel* (10 May) 1993, p. 3.

⁶⁶ Robert S. Jaster, 'Politics and the "Afrikaner Bomb,"' *Orbis* (Winter) 1984, p. 849.

⁶⁷ Howlett and Simpson, p. 154; Jaster (1980), p.12.

⁶⁸ U.S. NSA, Washington, DC: *Limited official use cable #01836*, from the U.S. Embassy in South Africa to the DOS, 1 May 1974.

HEU.⁶⁹ These moves signalled Vorster's determination to develop a nuclear capability, and to publicise this intention. With this in mind, Vorster must have been delighted to learn that Dr. Sven Konzelbeck (the U.S. scientist who developed the Mark II guided missile launcher) wanted to retire in South Africa.⁷⁰ Vorster was quick to fulfil Konzelbeck's wishes, and welcomed him to South Africa. This is not surprising, given that the U.S. missile specialist expressed his desire to help South Africa develop sophisticated missile, radar and satellite technology.⁷¹

4. The Angola debacle

Vorster's other response to Portugal's withdrawal was to revive his policy of 'outward movement,' originally begun in 1967. This policy involved the provision of aid and the establishment of trading links with neighbouring states, in the hope of finding friends and allies in Black Africa by ensuring their economic dependency on South Africa.⁷² This policy had mixed results. Where Mozambique was concerned, the policy achieved its objectives: Vorster was able to provide aid to the Machel administration, improving relations between the two states.⁷³ However, South Africa's economic leverage over Angola was limited. As a result, the government decided to take a different approach, replacing economic interaction with military intervention in the Angolan conflict.

Pretoria's direct military involvement in Angola proved to be a costly mistake, primarily because it gave the Soviet Union and Cuba a pretext for massive Cuban military intervention, resulting in a military presence of 20,000 communist forces along the South African border.⁷⁴ This had the effect of dramatically increasing South Africa's threat perceptions, as fears of a Black African invasion mounted. Vorster's desperation could be heard in his speech in

⁶⁹ This observation is based on primary evidence. U.S. NSA, Washington, DC: *Confidential Memorandum* from the DOS to Donald B. Easum, 21 May 1974. No declassification date. Also U.S. NSA, Washington, DC: *Unclassified cable #04873* from the U.S. Mission to the IAEA to the DOS, 31 May 1974.

⁷⁰ Walton Lyonnaise Brown, *Assessing the Impact of American Nuclear Non-proliferation Policy 1970-1980: An Analysis of Six Cases*. Unpublished Ph.D. Thesis, University of Michigan, 1982, p. 166.

⁷¹ *Ibid.*

⁷² Jaster (1980), p. 17.

⁷³ *Ibid.*, p. 21.

⁷⁴ *Ibid.*, pp. 21-25.

April 1975, in which he stated that the alternative to working out a détente with Black African states would be 'devastating.'⁷⁵ In the same speech, he announced that the Y Plant at Valindaba had begun successful operation.⁷⁶ Given the circumstances, it seems likely that Vorster deliberately linked the issue of nuclear power to the subject of Pretoria's security concerns, hoping to enhance Black African perceptions of South Africa's power by hinting at its nuclear ambitions. However, Vorster's threats did not have the desired effect - from October 1975, Soviet weapons and Cuban soldiers arrived in Angola in increasing numbers. Motivated by the realisation that the Angolan crisis was escalating to a point where South Africa was 'territorially challenged and diplomatically isolated,' Vorster was forced to accept the humiliating withdrawal of all South African forces from Angola on 22 January 1976.

Perhaps the most significant development during the Angolan debacle, was the withdrawal of U.S. support for the South African military operation. The extent of South Africa's isolation was highlighted in April 1976, when a UN Resolution was passed, branding South Africa an aggressor in Angola and calling for reparations to be imposed. The more extreme factions in South Africa's military establishment regarded this action as part of a communist conspiracy to isolate Pretoria, but it was more widely considered to signify the West's final abandonment of the apartheid regime.⁷⁷ The Vorster administration felt particularly betrayed by the failure of the United States to block the UN Resolution, as U.S. Secretary of State, Henry Kissinger, had originally encouraged Vorster to intervene in Angola, and had sought South African cooperation in his peace initiatives in Namibia and Angola.⁷⁸ This so-called act of betrayal left the National government feeling more alienated and insecure than ever before.

⁷⁵ U.S. NSA, Washington, DC: *Confidential cable #086148* from the U.S. Embassy, France, to the DOS, 15 April 1975. Declassified 14 August 1987.

⁷⁶ *Ibid.*

⁷⁷ U.S. NSA, Washington, DC: *Confidential cable #00449* from the U.S. Consulate General in Cape Town to the DOS, 21 April 1976.

⁷⁸ Jaster (1980), p. 30.

South Africa appears to have stepped-up its efforts to acquire a nuclear capability in response to these events. In April 1976, an uncorroborated report claimed that South Africa and Israel had signed a nuclear cooperation agreement during Vorster's visit to Israel, and at around the same time, Washington received intelligence data which - according to the CIA - proved that South Africa was embarking on a nuclear weapons effort.⁷⁹ Although these reports were unconfirmed at the time, and the nature of the nuclear cooperation between South Africa and Israel remains the subject of debate, the international response to these reports suggest that they were taken very seriously at the time. The Ford administration reacted by suspending shipments of nuclear fuel for the Safari reactor, and in November, the UN responded by imposing a mandatory arms embargo on South Africa.⁸⁰

5. The Soweto riots

South Africa's isolation, and its incentives to accelerate its nuclear programme, intensified as a result of events in June 1976, when the country was struck by its most serious racial disturbances of the century - the Soweto riots. Violent demonstrations over economic conditions and race discrimination left at least 600 dead and thousands injured in the townships, as well as widespread damage to property.⁸¹ As a result, in 1977 South Africa registered the exodus of nearly 1200 Whites, a sharp contrast to the average annual inflow of 27,200 between 1961 and 1976.⁸² Equally worrying for the White minority, was the exodus of 3000 Black South African's to Mozambique, Angola and Tanzania, where they were thought to undergo guerrilla training.⁸³ This had a dramatic impact on the ruling elite, which felt it was under siege by the Black majority inside and outside South Africa's borders.

⁷⁹ Under the terms of the agreement Israel would provide South Africa with nuclear information and send technicians and scientists to assist in the development of nuclear research, including atomic weapons. Shortly after the agreement was signed, Israeli scientists flew to South Africa to provide advice on the establishment of Safari II. See 'Cooperation with South Africa on Nuclear Pursuits Alleged,' *Worldwide Report* 7 (June) 1984, pp. 30-31.

⁸⁰ Masiza, p. 36.

⁸¹ *Ibid.*, pp. 25-26.

⁸² C. Raja Mohan, 'Atomic Teeth to Apartheid: South Africa and Nuclear Weapons,' *Institute for Defence Studies and Analysis* 12 (January-March) 1980, p. 261.

⁸³ Jaster (1980), p. 26.

The response of the Vorster administration to this internal insecurity was to tighten security laws, expand the police force and forcefully crush any further disturbances.⁸⁴ The repressive and brutal measures used to repress the riots led to widespread international condemnation, and to the Declaration on Southern Africa in early 1977, which called for the elimination of apartheid and the granting of equal rights to all groups of the population.⁸⁵ From this point onwards, South Africa was treated as an international out-cast - a pariah with which few states could afford to associate. The U.S. reaction to this international out-cry was to radically change its policy on South Africa in July, making it clear to Vorster, that 'for reasons of principle as well as self-interest the U.S. could not continue to have the same relationship with South Africa as long as that country pursued its apartheid policies.'⁸⁶

6. The Defence Amendment Act

In an attempt to deal with the deteriorating external security situation, a State Security Council was set up in 1977 to coordinate strategic planning in Pretoria. This led to the Defence Amendment Act of 1977, which legalised - for the first time - the deployment of SADF personnel 'at any place outside the Republic.'⁸⁷ The 1977 White Paper on Defence reveals the government's heightened threat perceptions, declaring that South Africa was facing a total onslaught from the external and internal security environment. At this point the concept of total strategy, which Defence Minister Botha had been exploring since the early 1970s, became the SADF's official strategic doctrine.⁸⁸ As Botha explained, total onslaught (defined as Black unrest, Soviet and Cuban intervention in Angola, and international isolation) required a total response, a 'comprehensive plan to utilise all the means available to a state.'⁸⁹

⁸⁴ Ibid., pp. 25-26.

⁸⁵ Ibid.

⁸⁶ U.S. NSA, Washington, DC: *Top secret NSC Memo*, 19 July 1977. Declassified 4 May 1995.

⁸⁷ Jaster (1980), p. 28.

⁸⁸ John Christopher Alden, *The South African State and Reform Apartheid: Processes of Change in State Strategy Under P.W. Botha*. Unpublished Ph.D. Thesis, The Fletcher School of Law and Diplomacy, January 1993, p. 105.

⁸⁹ Ibid., p. 106.

7. The Kalahari incident

The incident in the Kalahari Desert in August 1977 should be seen in the context of the minority government's heightened threat perceptions in the preceding years. Little is known about the circumstances surrounding the preparations for the alleged nuclear test, and most of the literature related to it is highly speculative.⁹⁰ It appears that orders were given to begin preparing the Vastrap test site some time in 1975, and by the time the site was detected by the Soviet Union in 1977, two shafts, a kilometre apart, had been excavated.⁹¹ However, intense international pressure from the United States, the Soviet Union, Britain, France, and West Germany forced the government to abandon the site - France, in particular, threatening to stop the Koeberg contract and to break off diplomatic relations.⁹² A secret White House Memorandum shows that the United States also took the incident very seriously, as secretary Vance concluded that 'South Africa could be ready to explode a nuclear device in a number of weeks,' and recommended that the United States should withdraw selected personnel from the Embassy in Pretoria, leaving a large enough presence to enable Washington to have access to intelligence information.⁹³ At the same time, intense pressure was imposed on Pretoria to sign the NPT and to subject its nuclear programme to international safeguards, and South Africa was denied its designated seat on the IAEA Board of Governors.⁹⁴

It is not clear what Pretoria's objectives were in the Kalahari Desert. It is unlikely that sufficient, indigenously produced, HEU for a South African atom bomb was available at this stage. The Y Plant was ready to go into full operation two months *after* the incident, in November, and began producing HEU in January 1978.⁹⁵ Official explanations of the test site's existence vary. At the time, the South African authorities informed the French government that they had

⁹⁰ Jaster (1984), p. 831.

⁹¹ Masiza, p. 36; 'South Africa's Secret Nuclear Programme: The Dismantling,' *Nuclear Fuel* (24 May) 1993, p. 12; Christie, p. 48. (Original source G. Oliver, 'End of an Era as Nuclear Site is Buried,' *Cape Times*, 8 June 1993, p. 1).

⁹² *Ibid.*, 49.

⁹³ U.S. NSA, Washington, DC: *Secret White House memorandum*, 24 October 1977. Declassified 5 May 1995.

⁹⁴ Stumpf (1996), p. 98.

⁹⁵ Masiza, p. 37.

been planning to carry out an atomic explosion for peaceful purposes.⁹⁶ However, more recently Armscor has claimed 'because no highly enriched uranium was available, it was decided to do a cold test (i.e. test without the device being fitted with U-235) during August 1977.'⁹⁷ There are three major problems with this account. First, it does not make sense to conduct a cold test of a gun-type device underground, in a hole 365 metres deep.⁹⁸ Second, if, as de Klerk has indicated, the planned test was part of a strategy to ensure the cooperation of the United States, it is hard to imagine how the cold test would have achieved this, as the explosion would not have been detected as a nuclear test. Third, U.S. experts, who had access to intelligence reports, claimed at the time that they were 99 per cent certain that South Africa was preparing for a nuclear test.⁹⁹ It seems more likely that the site was being prepared for a future test, to be carried out once sufficient HEU was available, or that South Africa was collaborating at this stage with a more sophisticated ally - perhaps Israel - from which it acquired the fissile material and technological assistance to conduct the test.¹⁰⁰

Part IV: The nuclear programme, 1978-1989: a political weapon?

By the end of the 1970s, South Africa had developed a crude nuclear capability. The next section explores the following controversial question: did Pretoria's decisionmakers view South Africa's nuclear capability as a political weapon, as South African officials have since claimed? Given the evidence that research was conducted into the feasibility of developing thermonuclear weapons by the time the nuclear programme was abandoned, is it possible that the National government's nuclear programme became more ambitious than the official account has indicated? Is it feasible that, as South Africa became more isolated,

⁹⁶ J. D. L. Moore, *South Africa and Nuclear Proliferation* (London: Macmillan, 1987), p.114.

⁹⁷ *Bulletin of the Atomic Sciences* (27 April) 1993, p. 3.

⁹⁸ Albright (1993), p. 9.

⁹⁹ Jaster (1984), p. 831.

¹⁰⁰ Christie, p. 49. It is possible that Vorster had discussed the possibility of a joint Israeli-South African nuclear test during his visit to Israel the previous year. The extent of the co-operation between the two countries at the time of the test can be seen from the secret shipment of Israeli tritium to South Africa in 1977. 'Slow But Steady,' *Bulletin of the Atomic Scientists* (July-August) 1993.

the tactics of the anti-apartheid movement became more sophisticated, and South Africa's superior conventional capabilities were eroded, Pretoria's nuclear intentions changed? During the 1980s, the National government may have begun to view the nuclear weapons as strategic equalisers, and - although this remains highly speculative - may have abandoned its earlier deterrence doctrine in favour of a doctrine based on strategic use. This is a highly sensitive issue, which, from the point of view of all the decisionmakers involved in South Africa's nuclear programme, is probably best left alone. However, it is worth considering whether the available primary and secondary sources provide any meaningful insight into this question of whether or not a shift in nuclear doctrine was taking place during this period.

1. Total Strategy

In September 1978, Vorster was replaced by P. W. Botha. As Defence Minister, Botha's belief in the threat of a communist onslaught and Black insurrection had driven Pretoria's security policy, leading to the introduction of total strategy as the government's official strategic doctrine in 1977. On taking his position as Prime Minister, Botha made sure that the military establishment was given an enhanced role in foreign policy decision-making, leading to the elevation of the ultra-conservative State Security Council (SSC) and the decline of the more liberal Ministry of Foreign Affairs.¹⁰¹ He also ensured that South Africa's nuclear weapons programme was accelerated and given top priority.¹⁰²

Progress in South Africa's nuclear programme was swift during Botha's first few months as Prime Minister. In October 1978, Armscor was put in charge of manufacturing the nuclear weapons, and the AEC was left with the responsibility of supplying the uranium and providing theoretical support.¹⁰³ By December the Y Plant was producing its first load of HEU, which was enriched to 80 per cent, and therefore impure and unsuitable for nuclear weapons.¹⁰⁴

¹⁰¹ Michele A. Flournoy and Kurt M. Campbell, 'South Africa's Bomb: A Military Option?' *Orbis* 32 (Summer) 1988, p. 390.

¹⁰² Hibbs, p. 4.

¹⁰³ *Ibid.*

¹⁰⁴ Masiza, p. 37.

Despite this, the first device was fitted with HEU. For Botha, who has been described as being 'singularly fixated on getting nuclear weapons,' this must have been a momentous occasion. From his perspective, Pretoria now had a weapon, which, though imperfect in its present form, greatly increased South Africa's political and military power. In his own words, Botha was prepared to 'utilise all means available to the state,' in his efforts to protect the status quo.¹⁰⁵ Given his fascination for the ultimate weapon, it is possible that these 'means' would include nuclear devices if the occasion arose.

2. The 1982 White Paper on Defence

South Africa became even more isolated during the Botha administration - a situation that fed the insecurities of the White minority, particularly with regard to the Soviet Union. International demands for an end to White rule intensified, but the arms embargo, economic sanctions and diplomatic pressure imposed by the international community simply increased Pretoria's resistance to reform. The government's attitude to the West, and particularly the United States, hardened. Since the collapse of the Kissinger initiative, the only area of continuing cooperation between South Africa and the West had been the Namibian problem. But by early 1979 negotiations over Namibia had broken down completely. South Africa's Foreign Minister, Pik Botha, accused the United States of trying to install the South West African Peoples Organisation (SWAPO) in power in Namibia, and Prime Minister Botha complained that South Africa had been left in the lurch by the Americans.¹⁰⁶ During this period, U.S. military attachés in Pretoria were expelled for alleged spying, and in a number of major policy statements by the Prime Minister and the Foreign Minister, the West was depicted as unwilling to stand up to communist expansionism.¹⁰⁷ According to Botha, the Republic of South Africa (RSA) had been abandoned by once-trusted friends, and was left to face the overwhelming threat of total onslaught alone.

¹⁰⁵ Alden, p. 105.

¹⁰⁶ Jaster (1980), pp. 31-32.

¹⁰⁷ Ibid., p. 33.

The 1982 White Paper on Defence exposes the true extent of the White minority's paranoia. It asserts that because 'the ultimate aim of the Soviet Union and its allies is to overthrow the present body politic of the RSA and replace it with a Marxist-oriented form of government to further the objectives of the USSR, therefore all possible means are used to attain this objective...this onslaught is supported by a world-wide propaganda campaign and the involvement of various front organisations and leaders.'¹⁰⁸ This shows a significant increase in the level of alienation felt by the government in comparison to the 1977 White Paper. Furthermore, additional primary evidence indicates that, by the early 1980s, this heightened threat perception was not limited to the government alone. An independent poll, conducted by the South African Institute for International Affairs (SAIIA) in 1981, revealed that 80 per cent of Whites - and 87 per cent of Afrikaans speakers - felt that the government was not exaggerating the communist threat.¹⁰⁹ This shows that the majority of the White population shared their leaders' threat perception, and that fear and insecurity permeated all levels of White society.

3. Anti-apartheid resistance

These fears were also fed by the cycle of anti-apartheid resistance and government repression, which became more disturbing in the early 1980s, as the ANC's tactics became more sophisticated and effective. In the 1960s and 1970s, the main targets of ANC sabotage had been public buildings and the occasional police station. In the 1980s the targets became more ambitious, as sites of strategic importance and symbols of White power came under attack. In 1980, part of Sasol 1 (the South African Coal, Oil and Gas Corporation plant) was destroyed by mines.¹¹⁰ In 1981 the ANC bombed the Durban Defence Force recruiting office and attacked the Voortrekkerhoogte Military Base.¹¹¹ In 1982,

¹⁰⁸ Republic of South Africa, *White Paper on Defence and Armaments Supply* (Cape Town: South African Navy Printing Unit, 1982), p. 2.

¹⁰⁹ Deon Geldenhuys, *What We Think? A Survey of White Opinion Foreign Policy Issues*. Occasional paper, South African Institute of International Affairs, November 1982.

¹¹⁰ Flourney and Campbell, p. 389.

¹¹¹ *Ibid.*

the ANC claimed responsibility for a bomb attack on the Koeberg-1 nuclear reactor construction site, in retaliation for the SADF raid on Maseru, Lesotho, in which 42 ANC members and Lesotho citizens were killed.¹¹² The four explosions at the site severely damaged the plant, delaying the project's completion. The following year, an ANC car bomb exploded outside the South African Air Force military intelligence building, causing 20 casualties, and destroying the facade of the building.¹¹³ In 1985, the Sasol 2 complex near Pretoria was hit by rockets.¹¹⁴ Botha's short-term response to this internal threat was to enforce the draconian laws passed in the 1960s and 1970s, but in the long-term he hoped that a programme of social reform would dissipate the resistance movement.

4. Fortress South Africa.

At the same time, Botha's response to what was perceived to be an international conspiracy against Pretoria's ruling elite, was to try to expand South African influence in order to develop a 'fortress South Africa.' His aim was to extend the South African defence perimeter to make the country less vulnerable territorially in the absence of friends and allies. This would involve tightening the laager, and extending it to include Namibia and Zimbabwe-Rhodesia.¹¹⁵ This policy was partly motivated by strategic considerations. By the early 1980s, there were signs that South Africa's conventional military superiority in southern Africa was being slowly eroded which, according to Botha, signalled that Pretoria's worst case scenario could soon become a reality. Whereas the military capabilities of the Front Line States were improving, due to Moscow's supplies of advanced equipment, including surface-to-air missiles, South Africa's conventional military strength was declining due to the UN arms embargo, insufficient technology and skills necessary in the production of heavy and sophisticated weapons such as

¹¹² Masiza, p. 39.

¹¹³ Flournoy and Campbell, p. 389.

¹¹⁴ Ibid.

¹¹⁵ Jaster (1980), pp. 34-35.

submarines and advanced fighter aircraft, and the chronic problem of limited manpower.¹¹⁶

5. The Vela flash: a 'zoological event'?

South Africa's nuclear developments in the late 1970s and early 1980s have to be seen in the context of these international, domestic and regional developments. Given the government's double security dilemma and its commitment to the defence of the *volk*, it is conceivable that the Botha administration did attempt to secretly test a nuclear device in 1979.¹¹⁷ Although, in 1993, de Klerk denied that South Africa was ever involved in such an activity, suspicions remain.

On 22 September the U.S. Vela reconnaissance satellite detected a double flash of light in the South Atlantic. Initial U.S. reports suggested that a 2-3 kiloton nuclear device had been tested.¹¹⁸ In each of the 41 previous cases where the Vela had recorded a double pulse, other evidence independently identified the cause as a nuclear explosion. The case is given added credibility by reports that at the same time as the Vela recording a radio telescope at Arecibo, Puerto Rico, registered an ionospheric disturbance, and the discovery by a New Zealand laboratory of short-lived fission fall-out in rainwater.¹¹⁹ South Africa was immediately suspected of conducting a secret nuclear test.

Botha denied the accusations, declaring that 'I know nothing of such a phenomenon.'¹²⁰ But subsequent comments made by the South African Prime Minister suggest that, initially, he had hoped to use the incident to generate international suspicion over the level and nature of South Africa's nuclear capabilities. Just a few days after the flash, Botha was quoted in a

¹¹⁶ Flournoy and Campbell, p. 392.

¹¹⁷ Neither would it come as a surprise to learn that South Africa was involved in nuclear testing in the same area in November 1980. At that time the U.S. Geological Survey observed a strong 'earthquake' near the site of the suspected September 1979 detonation. Then, on 16 December 1980, satellite sensors picked up radiation caused by a heat source in the same area. The Reagan Administration's Department of Defence and intelligence sources classified this sighting as a meteoroid. Ronald R. Walters, *South Africa and the Bomb: Responsibility and Deterrence* (Massachusetts: Lexington Books, 1987), p. 59.

¹¹⁸ Masiza, p. 37.

¹¹⁹ Jaster (1984), p. 832; Christie, p. 51.

¹²⁰ U.S. NSA, Washington, DC: *Unclassified cable #09790* from the U.S. Embassy, Pretoria, to the DOS, 28 October 1979.

newspaper as saying 'if there are people who are thinking of doing something else, I suggest they think twice about it. They might find out that we have military weapons they do not know about.'¹²¹ There is even evidence to suggest that, far from worrying about the damage that the accusations could cause to South Africa's reputation, Botha enjoyed the attention. Asked if he could explain what had caused the flash, he recommended that the United States should 'ask Neptune. As God of the sea, maybe he knows what happened.'¹²² However, Botha began to adopt a more cautious attitude when it emerged that the controversy could lead to demands in the UN for a nuclear embargo of South Africa, and might destroy the French Koeberg contract. An official denial therefore emerged in October, as the government explained that the flash was probably caused by an accident aboard a Soviet nuclear submarine, which had been in the vicinity during September.¹²³

In an attempt to limit the potential political and economic fallout from the suspected nuclear test, Botha declared himself to be extremely angry over what he described as Washington's sly and dishonest behaviour. Press reports in Pretoria claimed that information obtained by the Vela satellite would usually be classified, but that in this instance the United States had 'leaked' the details of the incident in order to increase international pressure on South Africa to sign the NPT.¹²⁴ Secret correspondence between the U.S. Embassy in Pretoria and the Department of State, suggest that the United States, perhaps motivated by concern about its own supply of natural uranium from South Africa, responded swiftly to the criticism, emphasising the care that the United States had taken not to level accusations against any country.¹²⁵ These diplomatic exchanges were followed in early 1980 with the U.S. retraction of its original story. The White House panel of scientists, set up to investigate the flash,

¹²¹ U.S. NSA, Washington, DC: *Unclassified cable #06139* from the U.S. Embassy, Pretoria to the DOS, 21 October 1982.

¹²² *Ibid.*

¹²³ U.S. NSA, Washington, DC: *Unclassified cable #09790* from the U.S. Embassy, Pretoria, to the DOS, 28 October 1979.

¹²⁴ U.S. NSA, Washington, DC: *Unclassified cable #09797* from the U.S. Embassy, Pretoria to the DOS, 29 October 1979.

¹²⁵ U.S. NSA, Washington, DC: *Secret cable #09988* from the U.S. Embassy, Pretoria to the DOS, 2 November 1979.

concluded that the Vela satellite had detected nothing more than a 'zoological event,' possibly the disturbance caused by a collision between a meteorite and a satellite.¹²⁶ However, suspicions remained, and in March the Soviet press printed allegations that the Vela flash was caused by an Israeli nuclear test, conducted with the help and cooperation of South Africa.¹²⁷

It is impossible to establish what actually happened on 22 September 1979, but the Soviet hypothesis is the most convincing. Firstly, Botha may have hoped that, by detonating a nuclear device in a remote location, the international hysteria provoked by the Kalahari preparations could be avoided. Yet, at same time, South Africa would be able to arouse suspicions over its nuclear capabilities and intentions, thereby creating a deterrent effect. The fact that the South African Navy declared a 'prohibited area' at Saldanha Bay in early September - the only such notice declared by South Africa that year - strengthens this hypothesis.¹²⁸ The plan may have been to provide some clues so that the test would be loosely linked to South Africa but without divulging enough evidence for blame to be confidently apportioned. Secondly, assuming South Africa did not have the technology to conduct such a test by 1979, as the evidence appears to indicate, it is possible that Israel was willing to collaborate with the republic. Given the extent of nuclear cooperation between the two countries since 1976, this would not be surprising.

However, it is unlikely that the mystery will ever be solved. In 1993, when de Klerk 'revealed' South Africa's secret weapons programme, South African officials continued to deny any knowledge of the suspected test, and more recently Waldo Stumpf has flatly stated that 'South Africa was certainly not responsible and was also not involved with anybody else in this incident.'¹²⁹ Unfortunately, the available evidence provides insufficient grounds to support or undermine these denials.

¹²⁶ Jaster (1984), p. 833.

¹²⁷ U.S. NSA, Washington, DC: *Limited official use cable #03667* from U.S. 'representatives' in the Soviet Union to the DOS, 5 March 1980.

¹²⁸ U.S. NSA, Washington, DC: *Unclassified cable #06139* from the U.S. Embassy in Cape Town to the DOS, 21 August 1982.

¹²⁹ Stumpf (1996), p. 100.

6. Constructive engagement, 1981-85.

Despite the international condemnation provoked by the suspected nuclear test, South Africa's nuclear development was given fresh impetus during the early 1980s, partly due to the Reagan administration's willingness to cooperate with Pretoria on nuclear issues. On 13-16 May 1981, Foreign Minister Pik Botha visited Washington for negotiations with the U.S. Secretary of State.¹³⁰ Discussions focused on the Namibian problem, the nuclear issue and U.S.-South African bilateral relations.¹³¹ During his visit, Pik Botha was informed that the Reagan administration intended to take a more flexible attitude to South Africa than the Carter administration, involving 'a policy of constructive engagement' rather than confrontation.¹³² As the following four years were to show, this 'flexibility' stretched to direct and indirect U.S. nuclear assistance for the South African programme. During this period, the United States granted permits for the export to Pretoria of advanced U.S. computers and equipment for vibration tests - products which would be useful in the manufacture and design of nuclear weapons, and which would facilitate the development of the Kentron Circle facility, which was intended to test the weapons, improving reliability without full-scale testing.¹³³ In May 1982, the United States voted against UN Resolution 36/86A, which banned the export of nuclear-related materials to South Africa.¹³⁴ There were also reports at the same time that the United States had received requests from Pretoria for a 'small quantity' of helium 3 which, after processing, can be converted into tritium for use in hydrogen bombs.¹³⁵ In 1985, newspapers reported the existence of 40 U.S. technicians, from both government-owned and

¹³⁰ U.S. NSA, Washington, DC: *Secret Briefing memorandum* from Chester A. Crocker at the DOS, to the U.S. Secretary of State, 12 May 1981. Declassified 13 October 1987.

¹³¹ U.S. NSA, Washington, DC: *Limited Official Use Memorandum* from the DOS to Chester A. Crocker, 2 May 1981. Declassified 7 October 1987.

¹³² U.S. NSA, Washington, DC: *Unclassified cable #128723* from the DOS to the U.S. Embassy in Canada, 20 May 1981.

¹³³ U.S. NSA, Washington, DC: *Unclassified cable #02962* from the U.S. Consulate General, Cape Town to the DOS, 20 May 1982. Declassified 2 September 1987.

¹³⁴ U.S. NSA, Washington, DC: *Limited use cable #01453* from the U.S. Mission to the UN to the DOS, 25 May 1982. Declassification date unknown.

¹³⁵ U.S. NSA, Washington, DC: *Unclassified cable #02962* from the U.S. Consulate General, Cape Town to the DOS, 20 May 1982. Declassified 2 September 1987. It is not known whether Washington agreed to supply this material, or what Pretoria would have done if its request had been granted. The process of converting helium to tritium is expensive and complicated.

private plants, working at Koeberg.¹³⁶ These reactor operators and technicians had been hired between 1983 and 1984, but whether or not this was part of the Reagan administration's 'flexible' policy' is unknown. Following international criticism, Washington denied all knowledge of the technical assistance, claiming that South Africa had hired the U.S. citizens without proper authorisation from the U.S. government.¹³⁷

The 1980s began well for Pretoria in terms of nuclear cooperation, with the United States, the UK, Switzerland, Germany and France providing materials and expertise to the apartheid government. During the early 1980s, these countries were pursuing a public policy of condemning apartheid, whilst sanctioning direct nuclear cooperation, or overlooking covert deals set up by private firms to supply South Africa with nuclear materials. Indications that these international 'double standards' were facilitating South Africa's nuclear development are not difficult to find. Firstly, in April 1982, the second and third gun-type weapons were produced in rapid succession at Advena.¹³⁸ Secondly, despite the ANC attack on the Koeberg-1 construction site in December, the new reactor went into operation in April 1984.¹³⁹ Lastly, in 1985 the design of the gun-type device was frozen, having reached the point where no further refinement was considered necessary.¹⁴⁰ Once this decision had been taken, ten buildings were added to the Advena site in order to facilitate the replacement of the gun-type device with the implosion-type device, and Armscor was reorganised to facilitate the smooth progression of the nuclear programme.¹⁴¹

7. The 'people's war' and revolutionary onslaught

The decision to begin work on the implosion device may have been motivated by the deterioration of South Africa's internal and external security from 1984-86.

¹³⁶ U.S. NSA, Washington, DC: *Unclassified cable #00888* from the U.S. Embassy, Pretoria to the DOS, 21 January 1985. Declassified 16 December 1987; U.S. NSA, Washington, DC: *Confidential cable #01552* from U.S. representatives in Moscow, to the DOS, 5 February 1985.

¹³⁷ Masiza, p. 39.

¹³⁸ Albright (1993), p. 9.

¹³⁹ Leonard S. Spector and Jacqueline R. Smith, *Nuclear Ambitions: The Spread of Nuclear Weapons 1989-1990* (Boulder, CO: Westview Press, 1990), p. 288.

¹⁴⁰ Albright (1993), p. 9.

¹⁴¹ *Bulletin of the Atomic Scientists* (July-August) 1993, p. 5.

On the domestic front, economic hardship and resistance movements sparked renewed unrest in September 1984. This escalated throughout 1985 and 1986, as the trade unions, the United Democratic Front (UDF), the Anzanian Peoples' Organisation (AZAPO) and Inkatha challenged the legitimacy of the system, and the ANC raised its profile at protest meetings. The belief that the country would soon become ungovernable grew amongst the Afrikaner elite, who watched as the ANC called for a 'people's war' - mass participation in military action to undermine the administration.¹⁴² They viewed the actions of the ANC, UDF and AZAPO as part of a communist-inspired effort to unleash revolutionary forces in South Africa. Symbolic of this fear was the replacement of total onslaught, the official description of the threat facing the country, with 'revolutionary onslaught.' The government responded to this threat by forcefully suppressing the Black protest, which had the effect of fanning the flames. On 21 March 1985, police fired on a crowd marching from the Langa township of Uitenhage to a funeral, which had been banned.¹⁴³ As a result, violence escalated all over the Eastern Cape, and by July, over 400 people had died in the disturbances. Botha, believing that the collapse of White power was in sight, declared a partial state of emergency 20 July, and a full state of emergency over the whole country on 12 June 1986, giving even wider powers to the security forces.¹⁴⁴

8. The international backlash against repression

International reaction to the Botha administration's domestic policies was fierce. The government's forceful suppression of the unrest received unprecedented media coverage, leading to anti-apartheid protests around the world. In Washington, daily demonstrations outside the South African Embassy led to the arrest of 2000 Democrats and Republicans, many of them prominent and newsworthy, between November 1984 and March 1985.¹⁴⁵ The pressure on governments to take action against apartheid increased sharply. As a result, in

¹⁴² Barber and Barratt, pp. 302-306.

¹⁴³ Ibid., p. 311.

¹⁴⁴ Ibid.

¹⁴⁵ Ibid., p. 307.

May 1985, the United States, the UK, and the FRG all terminated nuclear cooperation agreements with South Africa, in the hope that this would force the government to 'do away with apartheid.'¹⁴⁶ However, in August, Botha appeared unrepentant in a speech delivered in front of the world press in Durban. He promised no new initiatives on the domestic front, and warned the world that 'if we are forced until our backs are against the wall, we will have no alternative but to stand up and say to the world, "you won't force South Africa to commit national suicide."¹⁴⁷ International condemnation following the full state of emergency in June 1986, and the imposition of economic sanctions between July and October was met with the same hostile defiance, as Botha declared that 'neither the international community at large, nor any particular state, will dictate to us what the content of our political programme should be...we ourselves will find solutions to our problems and make them work.'¹⁴⁸

9. The Kalahari revisited

Despite Botha's display of confidence and determination, South Africa's security problems became more severe, and Pretoria less able to deal with them. First, the conventional threat increased. From 1985-87, Castro increased the numbers of Cuban troops in Angola, and the Soviet Union provided more sophisticated weapons to the MPLA. Botha believed that this was proof that the Soviet Union was planning a massive conventional attack on South Africa, and in order to reduce the threat, intervened on the side of the Union for the Total Independence of Angola (UNITA).¹⁴⁹ However, this intervention simply exposed

¹⁴⁶ Masiza, p. 40; U.S. NSA, Washington, DC: *Confidential cable #13986* from the U.S. Embassy, South Africa, to the DOS, 30 September 1985.

¹⁴⁷ Flournoy and Campbell, p. 394.

¹⁴⁸ Barber and Barratt, p. 332. Evidence suggests that the many of the sanctions imposed on South Africa proved to be an empty threat. For example, the Comprehensive Anti-Apartheid Act (CAAA) passed in the United States in July 1986 appears to have been riddled with loop-holes and escape clauses. The legislation was supposedly passed in order to prohibit further imports of uranium ore and uranium oxide from South Africa. On the same day that the regulation was published, the Treasury published an 'interim law' allowing the 'temporary' purchase of these materials for processing, and the subsequent export of these materials to third countries. U.S. NSA, Washington, DC: *Confidential cable #181036* from the DOS to the U.S. Embassy, London, 12 June 1987. Declassified 7 October 1987. French legislation appears to have been equally ineffective, as French imports of South African uranium actually rose between 1986-87. U.S. NSA, Washington, DC: *Confidential cable #37712* from the U.S. Embassy, Paris to the DOS, 14 August 1987. Declassification date unknown.

¹⁴⁹ The Reagan Administration also provided support for UNITA during 1985-6, although it was covert.

South Africa's vulnerability, as it became clear that the anti-apartheid coalition of forces fighting the SADF in Angola had gained the technological upper hand in conventional arms.¹⁵⁰ South Africa had lost air superiority, and Stumpf estimated that it would cost 22 billion rand to regain it.¹⁵¹ Second, the imposition of Israeli sanctions against South Africa in April 1987 exacerbated feelings of alienation and vulnerability. The Israeli Cabinet agreed that no new defence contracts would be signed with Pretoria, and that cultural and tourism links would be severed.¹⁵²

Armcor's immediate response to the Angolan situation and Israeli sanctions was to reassure the South African Whites that 'South Africa is developing a whole new range of armaments and has reduced its dependence over the years on foreign arms suppliers.'¹⁵³ At the same time, an AEC official announced that South Africa's nuclear programme would be independent of foreign suppliers by 1988.¹⁵⁴ But, despite these bold claims, the Israeli sanctions must have been a severe psychological blow to Pretoria, which appeared even more isolated and plagued by what was perceived to be a growing danger of Soviet revolutionary onslaught in southern Africa. This may well explain Botha's decision to re-open the Kalahari test site some time in 1987.¹⁵⁵ Apparently, on learning that Soviet air defence systems had been installed in southern Angola, eliminating Pretoria's air superiority, Botha asked for a schedule for requirements to conduct an underground test, and Armcor was ordered to secretly inspect at

¹⁵⁰ United Nations, *Implementation of the Declaration on the Denuclearisation of Africa: South Africa's Nuclear-Tipped Missile Capability*. Report of the Secretary General (New York: UN, 1990), p. 31.

¹⁵¹ Christie, p. 53.

¹⁵² Foreign Minister Pik Botha was convinced that 'the decision of the Israeli government is clearly a direct result of pressure by the United States.' Similarly, President Botha accused the United States of 'bullying' Israel, and added 'I have sympathy for Israel.' U.S. NSA, Washington, DC: *Secret cable #05040* from the U.S. Embassy, South Africa to the DOS, 1 April 1987. Declassified 1 March 1990.

¹⁵³ *Ibid.*

¹⁵⁴ U.S. NSA, Washington, DC: *Classification excised cable #303770* from the Defence Intelligence Agency (DIA) to DIA current intelligence, 4 November 1988. No declassification date.

¹⁵⁵ There appears to be some confusion over the date that the Kalahari test site was revisited. Mitchell Reiss claims that Botha re-opened the site in June 1988, in response to Castro's threat that Pretoria risked a 'serious defeat' in Angola, and his belief that Castro's forces were planning to cross the border into northern Namibia. According to this account, Pretoria constructed the hangar and prepared the test hole *after* the August cease-fire, during the lengthy negotiations over the schedule for the withdrawal of the Cuban troops. Reiss argues that Botha's strategy was to use the preparations to reinforce Pretoria's bargaining power, by warning the United States and the Soviet Union of the potential costs of failing to get the Cuban issue resolved. Although this version of events sounds convincing, and fits the official explanation of South Africa's nuclear weapons programme, every other account of the incident places the initial decision to reopen the site a year earlier. Mitchell Reiss, *Bridled Ambitions: Why Countries Constrain their Nuclear Capabilities* (Washington: Woodrow Wilson Center Press, 1995), pp. 13-14.

least one of the Kalahari test shafts.¹⁵⁶ A 100-metre-long hangar was erected over the site in order to avoid detection, and preparations for a nuclear test began. But despite Armscor's efforts, U.S. and Soviet satellites exposed the site, and Pretoria was forced to abandon it for a second time.¹⁵⁷

10. The Overberg missile test, May 1989

The Kalahari incident did not discourage Botha in his quest for the ultimate weapon. Although peace negotiations were underway in Angola in 1988, and an agreement was signed in December, the South African elite continued to feel threatened. In May 1989, U.S. intelligence sources picked up evidence of an imminent missile test at Overberg in South Africa.¹⁵⁸ Satellite photographs reportedly showed a test site identical to an Israeli site used to launch the Shavit space launch vehicle (SLV), a modified version of the Israeli missile known as the Jericho-II.¹⁵⁹ Scientists concluded that the SLV could be reconfigured as a ballistic missile capable of delivering a 500 kilogram warhead to a range of 7,500 kilometres, which would make it an ICBM.¹⁶⁰ Unable to conceal the test, the South African authorities announced the successful launch of a 'booster rocket' on 7 May 1989, but U.S. officials confirmed that, despite the promise of sanctions, Israel had indeed provided South Africa with the Shavit rocket, in return for uranium supplies.¹⁶¹ This caused intense international concern, leading the UN to carry-out a special investigation into South Africa's nuclear-tipped missile capability. Although the subsequent report claimed that South Africa's nuclear capabilities had been exaggerated, and that the production of long-range missiles was at least 10 years away, it acknowledged the genuine threat posed by South Africa's increasingly sophisticated nuclear weapons programme.¹⁶² Predictably, officials at Armscor denied allegations that the Botha administration

¹⁵⁶ Hibbs, p. 3.

¹⁵⁷ Masiza, p. 42.

¹⁵⁸ UN, *South Africa's Nuclear-Tipped Missile Capability*, p.29.

¹⁵⁹ Ibid.

¹⁶⁰ Ibid.

¹⁶¹ U.S. experts also stated at the time that they believed South Africa to be already 'far-advanced' in missile technology, having the capability and technology to manufacture ballistic missiles. *U.S. Foreign Broadcast Information Service (FBIS) (Swaziland)*, 22 June 1989. Declassified 1 January 1990.

¹⁶² UN, *South Africa's Nuclear-Tipped Missile Capability*, p. 30.

had hoped to produce a nuclear-tipped missile. In 1993 they claimed that 'the feasibility of a ballistic missile was studied...it was rejected on the grounds that the additional deterrence provided by such a delivery system was limited in terms of South Africa's nuclear strategy.'¹⁶³

On the basis of the sources available, it is impossible to conclude with any certainty that South Africa was pursuing a sophisticated nuclear weapons programme during the 1980s. This section has shown that, on a number of occasions during the late 1970s and the 1980s, Botha's public statements on the nuclear issue hinted that South Africa's nuclear programme was more ambitious than the subsequent official account has suggested. However, even taking into account the technological evidence that scientists at Advena were undertaking research on thermonuclear devices after 1985, insufficient evidence exists to convincingly challenge de Klerk's claims. Inconsistencies between the available sources and the official account indicate that there is good reason to doubt the latter's reliability, but only to the extent that questions can be raised about it. The sources are too few and too ambiguous to justify a confident rejection of the National government's own explanation of its motivations and intentions. Ultimately, any challenge to the official account must rely on intuition rather than evidence.

Part V: Nuclear rollback and the emergence of the democratic state, 1989-93

According to de Klerk, a decision was taken to abandon the nuclear weapons programme in September 1989. Unfortunately, little evidence exists to reinforce or undermine the official account of events, or the reasons given for rollback. However, on the basis of the patchy empirical record that does exist, three developments appear to have influenced the change in policy. First, the withdrawal of Cuban troops from Angola and the Soviet Union's announcement that peaceful methods should be adopted to resolve the problems in southern Africa. Second, the severe economic crisis in South Africa which, rightly or

¹⁶³ Brendan Boyle, 'South Africa Says it Has Destroyed its Nuclear Bombs,' *Executive News Service*, 24 March 1993.

wrongly, was widely believed to have been caused by Pretoria's adversarial foreign policy and the resultant economic sanctions. Third, the beliefs of South Africa's new leader, who believed that the National government's foreign and domestic policies had led South Africa into dangerous waters. Lastly, it has also been suggested that the nuclear weapons were abandoned because the White leadership realised that democracy was inevitable, and feared the consequences of a Black African bomb. However, it is impossible to establish whether this last factor played a part in the rollback decision.

1. The rollback decision

Shortly after the discovery that South Africa had tested a ballistic missile, de Klerk was elected President of South Africa on 14 September 1989. According to the official account, on assuming his post, he summoned de Villiers and Stumpf and informed them of his intention to terminate the nuclear weapons programme and to accede to the NPT. Dismantlement was swift. By early July 1991 the Y plant had been closed, the assembled nuclear devices dismantled, and the technology and hardware destroyed.¹⁶⁴ South Africa then joined the NPT on 10 July, and concluded a safeguards agreement with the IAEA two months later, although it was decided that the capability and the arsenal's dismantlement should not be publicised, because South Africa was in the midst of a 'profound political transition process,' and because its' leaders were aware of the adverse international reaction to Iraq's nuclear programme.¹⁶⁵ However, according to de Villiers, Jardine and Reiss, this policy of maintaining secrecy came under intense pressure from the ANC, which accused the government of undermining the confidence of the majority and of holding the country hostage to a nuclear threat.¹⁶⁶ The decision was therefore taken to publicise Pretoria's nuclear activities in March 1993, in order to defuse internal tension before the election scheduled for April 1994.

¹⁶⁴ J.W. de Villiers, Roger Jardine and Mitchell Reiss, 'Why South Africa Gave Up the Bomb,' *Foreign Affairs* 72 (November/December) 1993, pp. 103-104.

¹⁶⁵ Bailey, Howlett, and Simpson.

¹⁶⁶ De Villiers, Jardine and Reiss, p. 106.

2. The official explanation: external threat reduction

The official explanation for this ground breaking U-turn centres on dramatic changes in South Africa's security environment. By September 1989, South Africa's security situation had improved considerably due to the withdrawal of Cuban troops from Angola, Namibian independence, and the ending of Cold War tensions between the United States and the Soviet Union. The threat perception that had driven Pretoria's nuclear deterrent strategy gradually evaporated, leaving behind a stockpile of nuclear devices which came to be seen as an obstacle to South Africa's political and economic development. These were certainly crucial considerations. Following the Namibia/Angola settlement, it became clear to Pretoria's leaders that the Soviet Union had overturned the mainstays of its southern Africa policy. Firstly, Moscow had indicated that the southern African conflict required a political and not a military solution, and stressed that apartheid should not be overturned through armed struggle, but through peaceful means.¹⁶⁷ Secondly, Russian experts no longer believed that economic underdevelopment provided the prerequisites for socialism, and admitted that existing centralised planning had been too rigid and unrealistic.¹⁶⁸ With this change in policy, the threat of encirclement and communist onslaught disappeared.

3. A new conception of security?

Although it was probably the main factor, it is unlikely that Pretoria's nuclear rollback was motivated entirely by the changed strategic security environment. It is more likely that the de Klerk administration interpreted security in broader terms than the previous administration. For example, there is no doubt that by the late 1980s, South Africa's economy was under threat. According to Sadek Vahed, Director of the First National Bank of South Africa, in mid-1989 South Africa was 'at five to midnight economically.' He declared that 'we are in a terrible

¹⁶⁷ Barry Munslow and Kathryn O'Neill, 'Ending the Cold War in Southern Africa,' *Third World Quarterly* 12 (July) 1990, p. 89.

¹⁶⁸ Ibid. A report by senior experts of the Institute for African Studies at the Soviet Academy of Sciences affirmed this change in policy in October 1989.

mess; we are coming down Sydenham Road without breaks.¹⁶⁹ Although it is debatable whether this crisis was provoked by the international sanctions imposed on South Africa since 1985, it is clear that the economy was in decline.¹⁷⁰ The country's growth in terms of real gross national product (GNP) declined from 5.8% in the 1960s, to 3.4% in the 1970s and 1.5% in the 1980s.¹⁷¹ The incentives for South Africa to normalise its relations with the rest of the world and regain access to world financial markets cannot be ignored.

De Klerk's personal role in South Africa's decision to dismantle its nuclear weapons appears to have been pivotal. Firstly, the fact that de Klerk had no special ties to the military appears to have been crucial. In contrast to Botha, who ruled largely through the military, de Klerk placed civilians in charge of the state security council, restored the cabinet to its place as the highest policy-making authority, and dismantled the quasi-military shadow government that had been known under the euphemism 'National Joint Management System.'¹⁷² Without the overwhelming influence of the military, the economic and political consequences of South Africa's security policies could be assessed, and a new and broader approach to security issues could be considered. Secondly, de Klerk appears to have been motivated by a set of beliefs that differ quite dramatically to those of Botha. Whereas Botha had pursued a policy of repression combined with periods of domestic reform in order to quell Black unrest and protect the status quo, de Klerk recognised the fundamental injustice of apartheid.¹⁷³ Rather than fearing the consequences of democratic elections, de Klerk believed that South Africa's future development was dependent on the realisation of Black aspirations. This attitude appears to have been widespread in elite institutions from the mid-1980s onwards.¹⁷⁴ By the time de Klerk was elected, fear of Black power was being replaced with the hope of a more stable

¹⁶⁹ Ronaldo Munck, 'South Africa: The Great Economic Debate,' *Third World Quarterly* 15 1994, p. 205.

¹⁷⁰ Continuing debates over the general economic costs of sanctions are complicated by both a recession in the latter half of the 1980s and the role of nongovernmental sanctions. Report of the Commonwealth Committee of Foreign Ministers on Southern Africa, *Banking on Apartheid: The Financial Sanctions Report* (London: CCFMSA, 1989).

¹⁷¹ Munck, p. 205.

¹⁷² Steven Mufson, 'South Africa 1990,' *Foreign Affairs* 70 1990/91, p. 122.

¹⁷³ *Ibid.*, p. 124.

¹⁷⁴ *Ibid.*

and prosperous democratic future. This opened the way for de Klerk to take a more pragmatic approach to policy-making in general, and nuclear policy in particular.

Part VI: Empirical conclusions

Seven principal empirical conclusions can be drawn from this empirical analysis of South Africa's nuclear weapons policy:

1. Perceived external threats posed by communist-inspired and communist-led Black nationalist onslaught were partly responsible for the insecurity that drove South Africa's nuclear policy.
2. Internal threats to White minority rule, caused by the inequitable policy of apartheid and the brutal repression of Black South Africans, also created the insecurity that influenced South Africa's nuclear behaviour.
3. Increasing international isolation, due to the National government's lack of political legitimacy and repressive policies, exacerbated South Africa's insecurities, fuelling the drive for an independent nuclear capability. It is unlikely that Pretoria would have developed a nuclear capability if the United States had provided firm and legally-binding positive and negative security guarantees during the 1960s.
4. South Africa's political and military leaders used the nuclear issue as a political tool during the 1970s and early 1980s, in an attempt to compensate for its international isolation. In particular, Pretoria hoped to use nuclear threats to obtain military assistance from Washington after more diplomatic methods to acquire a nuclear guarantee had failed.
5. Nuclear weapons represented a powerful symbol of White power and invincibility. They provided psychological reassurance for the leadership and a key component of the laager.
6. It is possible - although not probable - that the RSA's nuclear doctrine shifted during the 1980s in response to South Africa's deteriorating internal and external security environment, although this remains speculative.

7. South Africa's rollback decision appears to have been motivated by internal and external security dynamics, and by the principled beliefs of the new Prime Minister, de Klerk. It is unlikely that such a decision would have been taken by Botha, who did not share de Klerk's vision of a democratic, socially cohesive and internationally integrated South Africa.

Part VII: Theoretical Analysis

This section assesses the explanatory value of neorealism when applied to the South African case. Initially, Waltz's parsimonious version of the theory is explored, focusing on the capacity of the concept of polarity to identify and explain the forces driving Pretoria's nuclear decisionmakers. The question addressed is: how does this concept contribute to our understanding of South Africa's nuclear activities and intentions during its years as a nuclear power, and can it shed any light on the factors that led to the rollback decision in 1989? Next, the concept of anarchy is examined with the same objectives in mind. The aim is to use the empirical evidence provided in the case study to test the validity of neorealism as a theory of nuclear proliferation - both in its parsimonious form, and in more complex interpretations.

1. Parsimonious neorealism

If structural forces had determined nuclear developments in South Africa, the following behaviour would be expected: during bipolarity, South Africa would seek a nuclear umbrella from one of the superpowers to increase its security under anarchy. The dynamics created by the bipolar distribution of power would ensure that the system structure operated in Pretoria's favour - a nuclear guarantee would be provided by the superpower to enhance its own relative power capabilities. If, at some point, the distribution of power changed, this security arrangement would break down as a result of the decline in superpower competition. Under these circumstances, South Africa would develop an indigenous nuclear capability to replace the nuclear umbrella.

This offers limited insight into South Africa's nuclear activities during and after the Cold War. South Africa did seek membership of a Western security alliance, and a nuclear guarantee from the United States. But by the late 1960s, it was clear to Pretoria's decisionmakers that this strategy would not succeed. The limited strategic and political support that Washington was prepared to offer at that time was short-lived, and even during the period of constructive engagement under Reagan, cooperation does not appear to have stretched beyond expedient commercial ties between the two countries. As a result, the decision was taken to explore the possibility of developing an independent nuclear capability. This outcome is unexpected given that the Cold War was gaining momentum all the time. Furthermore, South Africa's nuclear rollback decision coincided with the end of bipolarity. This behaviour completely undermined the predictions offered by parsimonious neorealism - as superpower competition waned, proliferation pressures should have increased rather than decreased. In which case, why did Pretoria dismantle its nuclear arsenal? The poor fit between the empirical record and the theoretical expectations is a strong indication that explanations and predictions of nuclear proliferation derived from the concept of polarity are, at best, insufficient.

2. Balance of power theory.

Balance of power theory would provide the following explanation of South Africa's nuclear behaviour in the 1950s and 1960s: the National government attempted to balance externally against the perceived nuclear threat from the Soviet Union, and internally against the conventional threat from Black nationalist forces. South Africa's decisionmakers believed that state security could be strengthened if a nuclear umbrella could be acquired from the United States to deter Soviet threats, and superior conventional forces could be developed within South Africa to guard against an attack by the Front Line States of southern Africa. When the external balancing strategy failed, and the threat increased due to the withdrawal of Portuguese power from Angola and Mozambique, the logic of anarchy ensured that the government was forced to develop an independent

nuclear capability in order to survive. This provides a purely strategic analysis of South Africa's nuclear development. It would suggest that Pretoria's nuclear arsenal was considered to have military utility, primarily to deter attacks from the South Africa's neighbours and from the Soviet Union.

Given that all neorealist theories are based on the rational actor model, it is important to consider whether this behaviour should be viewed as rational. Despite the National government's heightened threat perceptions, it is difficult to see any military utility for nuclear weapons in southern Africa, either as deterrent or defence. During the 1970s, South Africa's well-equipped and well-trained conventional forces already functioned as a deterrent to direct attacks - or encouragement of guerrilla activity - by the Front Line States. It is difficult to see how this conventional deterrent could be improved by the substitution of nuclear weapons for the conventional strength that South Africa already possessed in the 1970s.¹⁷⁵ If anything, a nuclear capability would undermine the National government's security if only because of the opprobrium that attaches to any state that brandishes nuclear weapons over the heads of its weaker, non-nuclear neighbours.¹⁷⁶ Furthermore, although a nuclear capability might seem attractive both as a deterrent and defence against an extension of Soviet power by military means, it would make more sense for South Africa to balance externally against this threat.¹⁷⁷ The empirical record shows that Pretoria's political leaders attempted to acquire a nuclear umbrella from the United States, but that this was not forthcoming. The question, which traditional balance of power theory cannot explain, is: why did this strategy fail?

It could be argued that a strategic rationale for South Africa's nuclear development did emerge in the mid-to-late 1980s, as South Africa began

¹⁷⁵ In 1973, George Quester argued that 'by manufacturing nuclear weapons itself, South Africa seemingly would stand to gain less than it would lose. Its conventional superiority over any political opponents in Africa is so clear that it would hardly seem advisable to change the rules of the game.' This argument was later reinforced by Edouard Bustin who, in 1975, concluded that 'from a strictly military viewpoint South Africa's ability to deal with any of the types of challenges that it is likely to face in the foreseeable future would not be significantly enhanced through the development of nuclear weapons.' George Quester, *The Politics of Nuclear Proliferation* (Baltimore: John Hopkins, 1973), pp. 201-202; Edouard Bustin, 'South Africa's Foreign Policy Alternatives and Deterrence Needs,' in Onkar Marwah and Ann Schultz (eds.), *Nuclear Proliferation and Near Nuclear Countries* (Cambridge, MA: Ballinger, 1975), p. 207.

¹⁷⁶ J. E. Spence, 'South Africa: The Nuclear Option,' *African Affairs* 80 (October) 1981, p. 446.

¹⁷⁷ Ibid.

to lose its superiority in conventional power to the Front Line States. Under these conditions, nuclear forces were required to balance internally against the increasing conventional threat. There are reports that South Africa's military and political leaders were considering developing nuclear weapons for strategic use during this period, and reports that, as a result of the National government's strategic goals, research was carried out at Advena into miniaturised nuclear devices, and 'clean' neutron bombs with no fallout.¹⁷⁸ These weapons could have been used to dramatically enhance South Africa's conventional capabilities, and could be used against external aggressors in South Africa's own 'back yard' without threatening South Africa's own survival.

This begs the question: why would South Africa's leaders behave in this way? If these developments were driven primarily by the need to balance against the capabilities of external actors in order to survive, then why were other technologically-capable, insecure states not developing useable nuclear weapons? What was different about South Africa? The fundamental problem with traditional balance of power theory is it cannot explain why different states respond in different ways to the same external threats. It excludes remote causes in the interests of simplicity and, as a result, leads to an unsatisfying, partial explanation of proliferation dynamics.

3. Structural realism

Structural realism offers greater insight into South Africa's nuclear behaviour because it derives explanations from the nature of the state.¹⁷⁹ Between 1960

¹⁷⁸ It is impossible to gauge how credible these reports are. One study, which is based on such reports and on interviews with people who claim to have been involved in South Africa's nuclear programme, gives details of the work that was supposedly carried out on miniaturised devices and 'clean bombs.' It must be said that this study is not taken seriously by academics, and is thought to be highly sensationalist. However, UN and IAEA reports confirm that South Africa's scientists were working on thermonuclear devices, and had acquired a ballistic missile from Israel when the programme was terminated, and that progress had been made beyond the original crude gun-type devices of the 1970s. South Africa's political and military leaders have denied this, insisting that there was never any intention to develop nuclear weapons that were deliverable. However, given that South Africa had a well developed biological weapons programme which was unhindered by international norms, it not impossible that the conventionalisation of nuclear weapons was under consideration, even if the technological constraints ensured that this was a distant goal. Peter Hounam and Steve McQuillan, *The Mini-Nuke Conspiracy: Mandela's Nuclear Nightmare* (London: Viking, 1995).

¹⁷⁹ Alexander Johnston derives explanations from South Africa's domestic situation, but he does not frame his argument in theoretical terms. He uses the concept of the 'weak state' to explain the National government's nuclear decisionmaking. Richard K. Betts and Robert E. Harkavy use the same arguments, but develop the concept of the 'pariah state' rather than the weak state. Alexander Johnston, 'Weak States and National Security: The Case of South Africa in

and 1989, South Africa provided the text book example of a state suffering from low attributive power. Successive governments faced a legitimacy problem created by the policy of apartheid, which generated hostility from the majority of the population inside South Africa, from South Africa's neighbours and from the world at large. The white minority government, which imposed repressive legislation in order to preserve the status quo, was considered to be beyond the pale by most states in the international system by the 1960s. South Africa came to be seen as an international outcast, a pariah.

As a result of its internal policies, Pretoria's capacity to interact with other states was greatly reduced. Relations with Black African states were worst affected, as Pretoria's policy of racial segregation inflamed nationalist feelings, heightened by the continent's bitter experience of colonial exploitation. This greatly increased the threat perceptions of the White minority in South Africa, who were convinced that their survival was threatened by forces hostile to apartheid: guerrilla insurgency from the Front Line States; direct attack by combined African forces; and Soviet-led revolutionary onslaught. South Africa's capacity to interact with states further afield was also badly affected. Multiracial states all over the world could not be seen to be cooperating with the apartheid regime, if they wished to maintain any semblance of racial harmony. More generally, any state that hoped to protect its trading relations with countries hostile to South Africa, had to limit its official contact with the pariah. Over time, as the anti-apartheid movement grew, these dynamics increased: the National government found it more and more difficult to interact, and faced the prospect of total isolation in the face of severe internal and external threats.

the Era of Total Strategy,' *Review of International Studies* 17 1991, pp. 151-154; Betts, (1977); Robert E. Harkavy, 'The Pariah State Syndrome,' *Orbis* 21 (Fall) 1977. These ideas are also developed in: Barry Buzan, 'People, States and Fear: the National Security Problem in the Third World,' in Edward Azar and Chung-in Moon (eds.), *National Security in the Third World: The Management of Internal and External Threats* (Upleadon: Edward Elgar Publishing, 1988), pp. 14-43; Barry Buzan, *People States and Fear: An Agenda for International Security in the Post-Cold War Era* (Hemel Hempstead: Harvester-Wheatshaf, 1991); A. M. Al-Mashat, *National Security in the Third World* (Boulder, CO: Westview Press, 1985); M. Ayoob, 'Security in the Third World: Is the Worm about to Turn?' *International Affairs* 60 1984; R. H. Jackson and C. G. Rosberg, 'Why Africa's Weak States Persist: The Empirical and the Juridical in Statehood,' *World Politics* 35 1982; R. H. Jackson and C. G. Rosberg, 'Sovereignty and Underdevelopment: Juridical Statehood in the African Crisis,' *Journal of Modern African Studies* 24 1986; Caroline Thomas, *In Search of Security: The Third World in International Relations* (Brighton: Wheatsheaf, 1987).

The National government's primary foreign policy goal was to overcome this international isolation, and its nuclear development can only be understood if this is taken into account. South Africa's barbaric domestic policies ensured that the West was unwilling to admit South Africa into a Western security alliance and the United States was unable to offer a nuclear umbrella. As a result, an indigenous nuclear capability was developed, not to use as a strategic weapon against South Africa's adversaries, but to use as a political weapon to increase South Africa's bargaining leverage with the West, and a psychological weapon to reinforce the Republic's image as a fortress and to intimidate the Front Line States.¹⁸⁰ The White minority's worst fears were a) South Africa would have to stand alone in the face of a Soviet-led revolutionary onslaught or b) a combination of mounting guerrilla warfare and Western pressure on the National government to abandon apartheid, would force them to 'commit national suicide.' In the first instance, the nuclear option could be used to persuade the United States to come to the aid of the South African government if the latter was in extremis. The South African government could declare its intention to conduct a nuclear test, stimulating fears in Washington that this action might drive other African states to stage a mass withdrawal from the NPT.¹⁸¹ To prevent this outcome, the United States would increase its interaction with South Africa, offering concessions and assistance. In the second instance, the suggestion or declaration of a nuclear capability would signal South Africa's determination not to bow to external pressure, bestowing on the South African regime an aura of permanency and invincibility.¹⁸²

This strategy had limited results. Initially, the vigorous Western reaction to the disclosure in 1977 that South Africa was preparing a nuclear test showed that the threat of a South African nuclear arsenal was taken very

¹⁸⁰ The political/diplomatic rationale behind South Africa's nuclear development is discussed in Fischer (1994), p. 215; Betts, pp. 101-105; Raja Mohan, pp. 264-265; and Spence, p. 447. Theorists who also refer to the psychological utility of the weapons include: Flournoy and Campbell, p. 398; Pierre Lellouche, 'Motives and Disincentives to Nuclear Proliferation: The Garrison States.' Paper presented at the IISS-ACA Seminar on Nuclear Proliferation and Arms Control in the 1980s, Ballaggio, Italy, 6-8 May 1978.

¹⁸¹ Fischer (1994), p. 215.

¹⁸² Flournoy and Campbell, p. 398.

seriously. However, although it increased South Africa's interaction capacity in the short-term, the type of support that the National government received from the West was meagre and tenuous. During the early 1980s, the U.S. policy of constructive engagement ensured that nuclear cooperation between the two states was resumed, resulting in the acceleration of South Africa's nuclear programme. Yet, publicly, the United States distanced itself from the apartheid state, denouncing its domestic policies in international fora. These double standards continued until 1986, when Congress passed the Comprehensive Anti-Apartheid Act in reaction to the brutal repression of the township riots. This brought cooperation between South Africa and its commercial partners to an abrupt end, driving Pretoria's interaction capacity down to an all time low.

If the conventionalisation of nuclear weapons did occur in South Africa, it may have been due to the failure of the diplomatic bomb to provide the White minority with the coveted strategic or political power. By the mid-1980s, South Africa had exhausted its options for increasing its interaction. The only alternatives were to abandon the policy of apartheid - which the White minority considered to be tantamount to committing national suicide, and therefore not an attractive choice - or increase the military power of the ruling elite, creating an invincible fortress immune to attacks from the inside and out. The latter strategy would be expensive and risky, but may have represented a last-ditched attempt to maintain the status quo.¹⁸³ With all alternative avenues for cooperation closed, the development of a useable nuclear capability was the option left open to the Whites to maintain their privileged position.

De Klerk's decision to rollback South Africa's nuclear programme is more difficult to explain using structural realism. This behaviour would not be expected to occur unless both the external and internal threats to the state were significantly reduced - in other words, such a decision would not be taken until

¹⁸³ This policy may not have seemed rational from a Western perspective, given the dominance of the concept of deterrence in thinking about nuclear weapons. However, in order to understand nuclear developments in states suffering from low interaction capacity and attributive power, it is not helpful to analyse nuclear decisionmaking from a Western perspective. To understand South Africa's nuclear development in the 1980s, a range of strategic doctrines should be considered, from massive retaliation to tactical battlefield use. Harkavy, pp. 641-643.

dramatic international and domestic changes increased the state's relational and attributive capabilities. Although the first condition was partly satisfied due to Pretoria's improved strategic environment following the withdrawal of Cuban troops and Soviet military assistance from Angola, and the imminent demise of the Soviet Union, the second condition was not fulfilled before the rollback decision was taken. In September 1989, South Africa's attributive power remained low due to the state's lack of socio-political cohesion. The policy of apartheid remained, the White minority continued to monopolise power and, as a result, domestic unrest still threatened the status quo. Why, under these conditions, would the National government relinquish the capability that it had used to compensate for its lack of political legitimacy? Structural realist theory cannot provide an answer to this question because it derives explanations and predictions of nuclear behaviour exclusively from changes in the physical capabilities of states, whether attributive or relational. In doing so, it cannot account for the role that ideas and beliefs played in shaping South Africa's nuclear policy. As a result, decisions that are influenced by norms and values, rather than material interests and power adjustments, cannot be explained.

Chapter Five

North Korea's Nuclear Weapons Policy

The rascals are noisily babbling about the superiority of political pluralism and are trying to use the completely rotten bourgeois ideology and culture to make the socialist countries collapse from within.

Nodong Sinmun, 7 July 1992.¹

North Korea has denied that it has ever intended to produce nuclear weapons. However, evidence indicates that North Korea possesses the capability - and therefore the option - to develop nuclear weapons, and Pyongyang's adversarial relationship with the nonproliferation regime suggests that the leadership has never ruled-out weaponising its nuclear capability. North Korea has several nuclear facilities that have the potential to produce nuclear weapons,² and there are signs that they might have been used for this purpose since the end of the Cold War. First, satellite photos reportedly show that the atomic reactors have no attached power lines, which they would have if used for electric power generation.³ Second, the five megawatt reactor was shut down for 70 days in 1989, and the reactors were slowed down for 30 days in 1990 and for 50 days in 1991.⁴ This provided opportunities for the removal of the nuclear fuel rods, and for the extraction of plutonium. Third, prior to 1993, North Korean scientists are believed to have converted reprocessed plutonium from a liquid form to pure metal.⁵ Nuclear experts describe this action as the last step prior to the assembly of an atomic bomb.⁶

Whether or not the Kim regime has come close to weaponising in the past, experts have estimated that North Korea has the capability to produce a small number of nuclear weapons. Based on different assessments

¹ *SWB, FE/1431, B/10*, 13 July 1992. *Nodong Sinmun* is North Korea's official publication.

² Most of North Korea's nuclear facilities are located at Yongbyon, 60 miles from the capital, Pyongyang. The key installations are: a five megawatt reactor, constructed between 1980 and 1987, which is reportedly capable of expending enough uranium fuel to produce about 7 kilograms of plutonium annually - enough for a single atomic bomb each year; two 50 megawatt reactors, which have been under construction since 1984. These are believed to have the capacity to produce 200 kilograms of plutonium annually - sufficient to manufacture nearly 30 atomic bombs per year; and a plutonium reprocessing building, where weapons grade plutonium is separated from a reactor's spent fuel. North Korean defectors have claimed that other, hidden nuclear weapons facilities also exist. Larry A. Niksch, *North Korea's Nuclear Weapons Program*. CRS Issue Brief (Washington: Library of Congress, 1996), p. 2.

³ *Ibid.*

⁴ *Ibid.*, p. 3.

⁵ *Nucleonics Week*, 8 July 1993.

⁶ *Ibid.*

of Pyongyang's technological sophistication and stockpile of reprocessed plutonium, these estimates range from just one nuclear weapon to three or four.⁷ There is also evidence that North Korea has developed an advanced delivery capability. In 1993, Pyongyang tested a Scud missile with a range estimated at 600 miles, capable of covering South Korea and part of Japan.⁸ In March 1994, the CIA confirmed reports that North Korea was developing two intermediate range missiles - the Nodong and the Taepo-dong - which, some experts have argued, will be capable of reaching Alaska.⁹

This chapter charts the development of North Korea's nuclear programme, identifying the periods when important proliferation decisions appear to have been taken. It addresses three principal questions. First, what appear to have been the main drivers of Pyongyang's nuclear weapons programme? Second, how have North Korea's tactics and strategies regarding the function and utility of nuclear weapons changed, especially since the end of the Cold War? Third, to what extent can the concepts of polarity, anarchy and interaction capacity provide insight into the causes of nuclear proliferation in North Korea's case? The study is organised in five parts. It begins by tracing the roots of North Korean thinking about nuclear weapons during the 1950s and 1960s. The second part shows the slow evolution of the nuclear programme in the 1970s, when Kim Il Sung was more interested in pursuing a diplomatic strategy to alleviate North Korea's security concerns. The third part charts the rapid, highly secretive expansion of the programme in the late 1970s and early 1980s, when Pyongyang felt increasingly isolated and threatened by the U.S.-South Korean strategic alliance. The fourth part explores the period of nuclear brinkmanship at the end of the Cold War, when the Kims used North Korea's nuclear capability to

⁷ DOS officials estimate that North Korea has acquired enough plutonium for one bomb. In 1993, the CIA and DIA estimated that there was sufficient plutonium to produce one to two atomic bombs. Russian, South Korean and Japanese intelligence estimates are higher - they have calculated that Pyongyang could have enough plutonium for three bombs. There are also studies that suggest these estimates are too low, based on a different calculation of the amount of plutonium that is required to produce a nuclear weapon. Niksch, p. 3; Darryl Howlett, 'Nuclearization and Denuclearization on the Korean Peninsula,' in Colin McInnes and Mark G. Rolls (eds.), *Post-Cold War Security Issues in the Asia-Pacific Region* (Essex: Frank Cass, 1994) p. 181; James Bayer and Robert E. Bedeski, 'North Korea's Nuclear Option: Observations and Reflections on the Recent NPT Crisis,' *Korean Journal of Defense Analysis* 2 (Winter) 1993, p. 105; 'North Korea: A Potential Time Bomb,' Special report no. 2, *Jane's Intelligence Review* (April) 1994, p. 7.

⁸ 'North Korea's Ballistic Missile Programme,' Special report no. 2, *Jane's Intelligence Review* (April) 1994.

⁹ Niksch, p. 3.

maximise the political leverage of the alienated state. The final part provides the theoretical analysis of the motivations, pressures and constraints that have driven North Korea's nuclear programme.

Part I: The embryonic nuclear programme 1955-1969

The roots of the DPRK's insecurity run deep. Since the partition of the Korean peninsula in 1945 and the emergence of two rival administrations in 1948, North Korea has been plagued by doubts over its domestic and international legitimacy. The Korean War of 1950-53, during which both North and South made a desperate bid for reunification, failed to resolve the problem. The involvement of the United States and the Soviet Union further complicated an already intractable situation, heightening threat perceptions and reinforcing feelings of alienation. By 1955, the combination of Pyongyang's inability to gain international diplomatic recognition and support, and fears of Seoul's growing strategic power and the prospect of reunification on the South's terms, led North Korea's leader, Kim Il Sung, to launch a nuclear research project.

From 1955 to 1968, this nuclear programme remained embryonic in form, but the timing of Kim Il Sung's decision suggests that his intention was not to develop a nuclear complex for civil purposes only - although this was an important driver, given North Korea's energy shortages - but that the military dimension would also be explored.¹⁰ As a result, the nuclear programme was set in motion during this period, and although a decision to actively pursue a nuclear weapons capability does not appear to have been taken at this stage, the possibility of developing nuclear weapons at some point in the future appears to have been considered. This section

¹⁰ Resource insecurity is endemic in Northeast Asia. The Asia-Pacific area provides little more than 10 per cent of global oil production and less than five per cent of world reserves, even including growing oil exporters such as Vietnam and Indonesia. With a reserves-to-production ratio of only 18 years, the entire region faces severe energy vulnerabilities. North Korea has substantial reserves of coal, but has no oil and is forced to import all its requirements either overland from China (75 per cent), or by uncertain sea routes of more than 7000 miles from Iran. Although Japan and South Korea also face resource insecurity, this problem is magnified many times in the case of the North, as it lacks foreign exchange and geopolitical leverage, and its ties to the international system are delicate and complex. As a result, the North's uranium reserves at Unggi, Pyongsan, and Hungnam, and its nuclear facilities are a vital part of North Korea's energy equation, intensifying Pyongyang's attraction to nuclear power. Kent E. Calder, 'Energy and Security in Northeast Asia's Arc of Crisis,' in Michael Stankiewicz (ed.), *Energy and Security in Northeast Asia: Fuelling Security*. IGCC Policy Paper No. 35. (Berkeley, CA: University of California, 1996), pp. 14-15.

traces the evolution of North Korea's nuclear programme, examining the strategic environment that influenced Pyongyang's early nuclear decisionmaking, and analysing the DPRK's two-pronged strategy for dealing with its deep-seated insecurities.

1. The U.S-ROK nuclear umbrella

North Korea's first contact with nuclear-related activities began in the late 1940s, although a decision to develop an indigenous nuclear programme was not taken until the mid-1950s, when the threat of nuclear attack emerged.¹¹ In January 1955, the Chairman of the U.S. Joint Chiefs of Staff, Admiral Arthur W. Radford, visited Seoul and pledged that the United States would provide South Korea with a nuclear umbrella.¹² This public and explicit nuclear commitment was reported in the press, fuelling insecurity and fear in the North.¹³ Kim Il Sung's decision to sign nuclear cooperation agreements with the Soviet Union and China later the same year may well have been triggered by this event, and could be seen as the beginning of a long-term strategy to deter the nuclear threat from the South.¹⁴

The nuclear threat intensified in the late 1950s. When Radford made his promise to the Republic of Korea (ROK) in 1955, the DPRK could at least be partially comforted by the knowledge that the armistice had banned the introduction of nuclear weapons into Korea.¹⁵ However, at the beginning of 1958 this situation changed, as the Neutral Nations Supervisory Commission - which was responsible for monitoring the nonproliferation agreement - was disbanded.¹⁶ Following the removal of this agency, the U.S.-led UN Command announced that nuclear-capable weapons systems were to

¹¹ In 1947, the Soviet Union sent a team of scientists to North Korea to conduct a geological survey of the monazite mines, and in 1949-50, Pyongyang exported concentrates of monazite - and other kinds of thorium ore used in nuclear production - to Moscow in partial payment for military equipment and arms delivered to Pyongyang before the outbreak of the Korean War. During this period, China also took an active interest in the DPRK's potential as a supplier of radioactive materials, and sent one of Beijing's nuclear scientists, Dr. Wang Ganchang, to North Korea in search of deposits. Alexandre Y. Mansourov, 'The Origins, Evolution and Future of the North Korean Nuclear Programme,' *Korea and World Affairs* 19 (Spring) 1995, p. 41.

¹² Michael J. Mazarr, *North Korea and the Bomb: A Case Study in Nonproliferation* (London: Macmillan Press, 1995), p. 20.

¹³ *Ibid.*

¹⁴ In accordance with the Soviet agreement, North Korean nuclear scientists began to receive professional training in nuclear physics at the Dubna Nuclear Research complex. Scientists were also sent to China for instruction at the PRC's facilities. Mansourov (1995), p. 42.

¹⁵ Peter Hayes, *Pacific Powderkeg: American Nuclear Dilemmas in Korea* (Lexington: Lexington Books, 1991), p. 34.

¹⁶ *Ibid.*

be introduced into South Korea.¹⁷ By the end of the year, it was confirmed that 280-mm artillery shells and nuclear-tipped rockets had been stationed in the South.¹⁸

This information coincided with the release of highly sensitive U.S. government documents relating to the Korean War. According to sources close to Kim Il Sung, he had never believed that the United States would contemplate using nuclear weapons against the North during the war.¹⁹ The release of these documents were said to have shocked the North Korean leader, as they provided hard evidence that the possibility of a U.S. nuclear strike against the DPRK was seriously considered.²⁰ The psychological impact of this revelation, combined with the confirmation that U.S. nuclear weapons were now based across the border, must have been immense. The second Soviet-DPRK agreement on nuclear cooperation was signed in 1959, possibly in response to this situation. This agreement authorised the transfer of a small nuclear research reactor to Pyongyang.²¹ This was followed by the decision in the early 1960s to withdraw North Korean nuclear scientists from the Dubna Complex and set up an indigenous nuclear research centre at Yongbyon, 90 miles north east of Pyongyang.²²

2. North Korea's search for a nuclear umbrella

Whatever Kim Il Sung's intentions regarding North Korea's early nuclear development, the option to build nuclear weapons would not be available for many years, and the scientists would no doubt have informed him of the technological obstacles that would have to be overcome. Pyongyang's solution to this problem was to adopt a short-term strategy for dealing with the potential nuclear threat, in the form of powerful allies. However, although the

¹⁷ Ibid., p. 35.

¹⁸ Ibid.

¹⁹ Mansourov (1995), p. 43.

²⁰ It is not clear how this information reached Kim Il Sung, but a White House memorandum, released more recently, confirms that the United States was indeed considering using nuclear weapons to try and end the Korean War. This issue was discussed at a meeting in Washington attended by Eisenhower, Churchill, Eden and Dulles in 1953. Rather bizarrely, the next item on the agenda was the 'possible visit by the Queen Mother to the United States in the fall of 1954.' U.S. NSA, Washington: *Top secret White House memorandum #454*, 5 December 1953. Declassified 8 June 1991.

²¹ Mansourov (1995), p. 43.

²² Ibid.

Soviet Union and China would appear the obvious choices from North Korea's perspective, the task of finding a reliable strategic partner was not easy. In 1955, Kim Il Sung had introduced the concept of *juche*, or self-reliance, in part because he did not trust the Soviet Union and wanted to develop an independent identity as a counterweight to Soviet influence.²³ Events in April 1956 served to reinforce the North Korean leader's feelings of mistrust, as Soviet and Chinese delegates intervened at the Third Party Congress of the Korean Workers' Party (KWP), backing Kim's opponents over the issue of economic modernisation and calling for a 'collective' leadership in the North.²⁴ This soured Pyongyang's relations with Moscow and Beijing, which may explain the delay that occurred between the confirmation that U.S. nuclear weapons would be stationed in South Korea, and the decision to seek formal defence pacts with the Soviet Union and China in July 1961.²⁵

It is possible that, by 1961, Kim Il Sung felt that North Korea's deteriorating security situation needed to take priority over his pride. The threat posed by Seoul's burgeoning military power appeared to intensify in May 1961, when a military coup brought Park Chung Hee to power in South Korea.²⁶ Whereas the South's previous government had been peaceful and reform-oriented, the North Korean leader would not have known what to expect from the new military regime. It has been suggested that Kim Il Sung thought President Park might attempt to strike north, and that this possibility, combined with his fear over the implications of the strengthening strategic partnership between the United States and South Korea, triggered his decision to try to acquire nuclear guarantees from the Soviet Union and China.²⁷

Any feelings of security that might have resulted from the defence pact with the Soviet Union were short-lived. Although Pyongyang attempted to remain neutral during the Sino-Soviet rift, North Korea's

²³ Suh Dae Sook, *Kim Il Sung: The North Korean Leader* (New York: Columbia University Press, 1988), pp. 137-145.

²⁴ Mazarr, p. 22.

²⁵ Hayes (1991), p. 143

²⁶ *Ibid.*, p. 23.

²⁷ *Ibid.*

allegiance shifted towards China in 1962, following Kim Il Sung's disappointment over Moscow's unwillingness to stand up to U.S. military might in Cuba.²⁸ The Soviet Union's lack of commitment to Cuba was apparently particularly troubling, raising doubts over the reliability of the Soviet nuclear umbrella in the event of renewed conflict on the Korean peninsula.²⁹ Kim Il Sung therefore decided to support China in its war against India, in the hope that this would be reciprocated. As a result of this action, he alienated Khrushchev, who cancelled virtually all aid to North Korea.³⁰ The implications of this rift were serious, as China had withdrawn all its troops from North Korea in 1958, and the Korean Peoples Army (KPA) relied heavily on the Soviet Union for military equipment and supplies.

3. The militarization of North Korea, 1962

Developments in the early 1960s indicate that the 1961 defence pacts did not provide North Korea with allies that could be relied upon in the event of a crisis, particularly if it had a nuclear dimension. The Sino-Soviet rift, especially, had a lasting effect on Kim Il Sung, who felt that the animosity between the two communist states was causing instability. This helps explain Kim Il Sung's decision to authorise a reassessment of the DPRK's nuclear policy, and the rapid militarisation of the state. This occurred in 1962, when the North Korean leader applied the concept of *juche* to the military sector, asserting that it was imperative that the basic elements of defence could be produced locally if the revolution was to survive.³¹ As a result of this drive for self-sufficiency: the North began to spend roughly one third of its budget on its military; five years mandatory military service was introduced for the entire able bodied population; and new arms factories were built and hidden in huge underground dugouts.³² This programme of militarisation put an enormous strain on the North Korean economy, but Kim Il Sung and his aides were apparently convinced that drastic measures were needed. These measures

²⁸ Chung Chin O, *Pyongyang Between Peking and Moscow* (Mobile: University of Alabama Press, 1978), pp. 27-67.

²⁹ Hayes (1991), p. 125; Mansourov (1995), p. 40; Mazarr, p. 23.

³⁰ Suh, p. 179.

³¹ Mazarr, p. 23.

³² Ibid.

may have included a decision to push ahead with the country's nuclear programme, and although little is known about the internal nuclear debate that occurred at this time, or its outcome, it has been suggested that an important proliferation decision was taken in 1962.³³

4. North Korea as alienated state

There was a significant downward trend in North Korea's relationship with its allies during the 1960s. The exception was a short period from 1965 to 1967, when Kim Il Sung patched up his differences with the Soviet Union in order to obtain the research reactor promised by the Soviets in the 1959 nuclear cooperation agreement.³⁴ However, the goodwill stimulated by this transfer did not last long. By the late 1960s, Moscow and Pyongyang were at loggerheads again, this time over their relations with Washington. Kim Il Sung described the Soviet leaders' attempts to engage the United States in the first stages of a planned détente as 'unthinkable heresy.'³⁵ Moscow, on the other hand, regarded North Korea's anti-U.S. action and rhetoric as reckless and destructive, and responded by reducing its economic aid.³⁶

The parallel crisis in Sino-North Korean relations intensified Pyongyang's feelings of alienation. During the early stages of the Chinese Cultural Revolution, Pyongyang and Beijing traded insults over various ideological questions, and between 1967 and 1969 they exchanged fire several times over a disputed border area.³⁷ As a result, by the end of the decade, North Korea was completely isolated, having shunned its allies, antagonised its enemies, and further tarnished its international reputation. 1969 appears to have been a crucial year in this respect, as tensions reached a climax: China and the Soviet Union clashed over the Amur River; disputes over Moscow's policy of détente escalated; and officials in Pyongyang

³³ Mansourov (1995), p. 41.

³⁴ Ibid., p. 42.

³⁵ Suh, p. 177.

³⁶ In the late 1960s, North Korea was responsible for taking the USS *Pueblo* and its crew hostage, and for shooting down a U.S. EC-121 reconnaissance plane. Chung, p. 108-133.

³⁷ Ralph N. Clough, *Embattled Korea: The Rivalry for International Support* (Boulder, CO: Westview Press, 1987), p. 250-260.

became concerned that Japan might join the United States as a co-sponsor of South Korea.³⁸

Part II: The diplomatic strategy and the changing threat, 1970-77

As a result of the multiple crises in the late 1960s, Pyongyang was constantly on edge about its security. Attempts during the early to mid-1970s to accumulate nuclear technology-related knowledge and practical expertise at the Yongbyon research complex could be seen as part of a continuing long-term strategy to deal with these threats. However, in the short-term, Kim Il Sung was aware that his attempts to secure a reliable security guarantee had failed, and that he could not afford to let the decline in Pyongyang's political and strategic position continue. Moreover, by the mid-1970s news of South Korea's attempts to develop a nuclear weapons programme reached the North, reinforcing the North Korean leader's fears that the South was moving towards reunification on its own terms.³⁹

This section deals with North Korea's attempts to cope with these external threats. From Kim Il Sung's perspective, the threat of an indigenous South Korean nuclear capability presented both problems and

³⁸ Ibid., p. 260. Kim Il Sung may also have been aware that the United States had increased its assistance to South Korea, and that Seoul was gaining the upper hand in terms of conventional superiority. In April 1968, President Johnson agreed to provide an additional \$100 million in military assistance for South Korea, after a meeting with President Park in Honolulu. U.S. NSA, Washington: *Secret DOS Memorandum #2039*, April 1968. Declassified 23 August 1995. Another document confirms Japan's statements regarding closer cooperation with the United States in South Korea. In a secret memorandum, Secretary Schlesinger of the United States is urged to 'find out what the Japanese leaders have in mind when they talk about enhanced U.S.-Japanese defence co-operation' in Korea. U.S. NSA, Washington: *Secret DOS Memorandum #3187*, no date (although content suggests 1968). Declassified 11 January 1996.

³⁹ In June 1970, the U.S. announced the withdrawal of its forces from South Korea. This was followed by South Korea's decision to approve the construction of a nuclear power plant, the Kori Nuclear Unit 1. In May 1972, the South Korean Minister of Science and Technology, Ch'oe Hyong-sop, began negotiations with France on the introduction of reprocessing technology and facilities in South Korea. In late 1973, a decision was taken to accelerate the development of nuclear power plants and, as a result, in 1974, Seoul concluded its first contract with the United States, with the purchase of Kori Nuclear Unit 2. In 1974, negotiations were also underway with Canada, leading to the purchase of a CANDU reactor in January 1975. At this point, the U.S. government became suspicious of Seoul's nuclear intentions, and began a high profile campaign to pressurise the South to ratify the NPT. President Park asserted that 'Although Korea has the capacity to produce nuclear weapons, we do not [intend to] develop them presently.' Two days after this statement, a group of representatives from the South Korean National Assembly, who were visiting the United States to try to reverse the U.S. decision to withdraw ground and air forces from South Korea, stated that 'as of June 12 [1975], the Korean government does not have a plan to develop nuclear weapons. However, if the U.S. withdraws its nuclear umbrella from Korea, Korea will have to develop nuclear weapons.' As a result, a fierce diplomatic war broke out between Washington and Seoul. It was at this point that the North Korean leadership became extremely concerned about South Korea's intentions. Neither scenario was attractive: either the South acquired its own nuclear weapons, or the United States would station U.S. weapons on South Korean territory. O Won Chol, 'Nuclear Development in Korea in the 1970s,' *Pacific Research* 7 (November) 1994, pp. 12-13. (O Won Chol was Senior Advisor for Economic Affairs to President Park from 1971 to 1979, and led South Korea's nuclear energy development programme and the defence industry development programme. He was sworn to secrecy over Seoul's nuclear development until 1992, when he began to publish his memoirs in Han'guk Kyongje Sinmun (Korean Economic Daily)).

opportunities. The threat of facing a nuclear neighbour in the mid-term forced him to try to reaffirm ties with China and the Soviet Union and obtain new security pledges from them. However, no sudden attempts appear to have been made to rapidly accelerate North Korea's own indigenous nuclear development - the programme remained relatively primitive and progress was slow and steady. It is possible that this was due to Kim Il Sung's belief that the shift in U.S.-ROK relations, and international concerns over Seoul's nuclear intentions, could be used to strengthen the DPRK's position. The North Korean leader therefore began a diplomatic strategy to seize the moral high ground from the South, by denouncing nuclear weapons and publicly committing himself to the nonproliferation cause.

1. The ROK's nuclear weapons programme

In the early 1970s, the United States began to withdraw troops from South Korea in an attempt to encourage Seoul towards greater self-reliance.⁴⁰ President Park's response to this development - which he saw as sign that the U.S. security commitment was fading - was to implement an existing plan to convert the South's civil nuclear programme so that it could be used for military purposes.⁴¹ Although recently declassified information indicates that the United States was aware of Park's intentions to develop a nuclear capability as early as the late 1960s,⁴² the first reports concerning Seoul's nuclear ambitions did not reach the press until June 1974, when the *Washington Post* reported President Park's remarks that South Korea could produce nuclear weapons if the U.S. nuclear umbrella were to be removed.⁴³ It is likely that this news reached Pyongyang, but in the unlikely event that it did not, it certainly reached Kim Il Sung in 1975, when proliferation concerns intensified following revelations that South Korea had signed a reprocessing

⁴⁰ Ambassador Sneider discusses a review of U.S. policies towards South Korea in a documents recently released in the United States. U.S. NSA, Washington: *Secret DOS Cable #3177*, from the U.S. Embassy, Seoul, 22 April 1975. Declassified 13 March 1996. U.S. NSA Washington: *Secret DOS Cable #3178*, from the U.S. Embassy Seoul, 24 June 1975. Declassified 27 February 1996.

⁴¹ O Won Chol, p. 12.

⁴² A Department of State memorandum reveals that, in the late 1960s, the United States was keen to 'urge the ROK to examine more carefully some of their grandiose notions about developing very advanced weapons,' *Secret DOS Memorandum #3187*.

⁴³ Mazarr, p. 27.

deal with France and a reactor deal with Canada.⁴⁴ Park's decision to ratify the NPT in May 1975 would have provided little comfort for Pyongyang, as it was followed a month later by Park's announcement that 'if the U.S. nuclear umbrella were to be removed, we [would] have to start developing our nuclear capability.'⁴⁵

2. The search for allies

Kim Il Sung turned to China and then to the Soviet Union to attempt to balance against the threat of an indigenous South Korean nuclear capability. With this in mind, Kim Il Sung put a stop to the ideological duelling that had plagued relations between North Korea and its oldest ally since the late 1960s, and made plans to approach the Chinese premier, Zhou Enlai, for help. During his April 1975 visit to Beijing, the North Korean leader requested Chinese assistance in developing the North Korean nuclear weapons programme, and urged the PRC to provide an explicit nuclear guarantee.⁴⁶ Kim's success in this regard is largely unknown, although the available evidence indicates that China was not overly enthusiastic.⁴⁷ However, additional training for North Korean nuclear scientists and technicians was arranged, and as a result of the meeting, at least one high-level visit was made to China's Lop Nor nuclear test and research facility.⁴⁸

Attempts were also made to engage the Soviet Union in constructive dialogue, and to place relations on a more even keel. During this time Pyongyang reportedly negotiated another nuclear cooperation agreement with Moscow, which gave the go-ahead for the purchase of more

⁴⁴ A memo from Jan M. Lodal and Dave Elliot (from the National Security Council) to Secretary Kissinger concerning the U.S. approach to South Korea's nuclear intentions states that, by 1975, President's Park's nuclear ambitions were 'well known in Congress and in the international arms control community' making it 'difficult for the United States to continue nuclear commerce with Korea unless some specific protective measures are taken.' U.S. NSA, Washington: *Secret Memorandum #430*, 24 July 1975. Declassified 13 June 1995. United States apparent opposition to the French-ROK reprocessing deal was reported in the South Korean press. U.S. NSA, Washington: *Limited Official Use Cable #8676*, from the U.S. Embassy, Korea, to the DOS, Washington. However, another - highly censored - cable from Sneider to Kissinger shows that the United States had reassured President Park that he could rely on the United States for enrichment and reprocessing services. This suggests that Washington's public stance may well have differed from its actual behaviour over this issue. U.S. NSA, Washington: *Secret DOS Cable #3184*, from the U.S. Embassy, Seoul to the DOS, 16 December 1975. Declassified 13 March 1996.

⁴⁵ *International Herald Tribune*, 11 August 1977.

⁴⁶ Chung, p. 146.

⁴⁷ Joseph Bermudez, 'North Korea's Nuclear Programme,' *Jane's Intelligence Review* (September) 1991, pp. 404-411.

⁴⁸ *Ibid.*, p. 408.

nuclear reactors and additional training for North Korean scientists at the Dubna Nuclear Research Complex.⁴⁹ However, despite these encouraging signs that Kim Il Sung had managed to regain the support of his traditional sponsors, there is no evidence to confirm that concrete security guarantees were obtained from China or the Soviet Union. Certainly in Moscow's case - and possibly even Beijing's - nuclear cooperation appears to have been motivated by economic considerations rather than a political or ideological commitment to Kim Il Sung and his regime. It is unlikely that this point would have been lost on the edgy North Korean leader, which could help explain his decision to try and gain the moral high ground on the nuclear issue.

3. North Korea's diplomatic offensive

Still lacking a firm security guarantee, Kim Il Sung attempted to use the diplomatic card to contain the threat from the South. He publicly denounced nuclear weapons, declaring that any attempt, by either the United States or South Korea, to use nuclear weapons to deal with the security situation on the Korean peninsula would be irrational. He asked 'how can [the United States] use nuclear weapons here in Korea when friend and foe will grapple [with] each other? Should the enemy use nuclear weapons he will also get killed.'⁵⁰ He also made more open commitments to international nonproliferation agreements in order to exert maximum international pressure on President Park. To create an image of compliance, North Korea joined the IAEA in September 1974.⁵¹ Moreover, every time news about South Korea's progress in the nuclear field reached the international press, Kim Il Sung reaffirmed his commitment to nuclear nonproliferation. For example, when the South Korean National Assembly endorsed the development of a more explicit capability to produce nuclear weapons in July 1977, Pyongyang signed the 'Type 66' agreement with the IAEA, which authorised the

⁴⁹ Mazarr, p. 29.

⁵⁰ Young Sun Ha, *Nuclear Proliferation, World Order, and Korea* (Seoul: National University Press, 1983), p. 130.

⁵¹ Hayes (1991), p. 131. This served two purposes. It was a necessary step to take in order to authorise the transfer of nuclear-related materials from the Soviet Union to North Korea. Under the terms of the NPT, none of the nuclear weapon states are permitted to supply nuclear materials that might be used for nuclear weapons production to third parties. It also showed South Korea in a dim light, and put Seoul under pressure to abandon its nuclear programme.

inspection of the small reactor at Yongbyon.⁵² This action put South Korea on the defensive diplomatically, and cast it in the role of pariah.

Kim Il Sung also tried to engage the United States in dialogue over the issue of Korean reunification and arms control.⁵³ A NSC memorandum shows that North Korea approached the United States on several occasions between 1975 and 1977, in an attempt to establish bilateral contacts.⁵⁴ However, the document details Washington's negative response to Pyongyang's overtures, citing U.S. fears that Kim Il Sung's strategy was motivated by a desire to reunite the Korean peninsula on his own terms.⁵⁵ Officials in Washington were wary of Pyongyang's improved international position, concerned that international opinion was shifting away from the South. As a result they continued to block Kim Il Sung's efforts to establish bilateral relations, arguing that the preconditions set out in his proposals for North-South cooperation were too rigid.⁵⁶

4. The economic crisis, 1976

More generally, Pyongyang's diplomatic strategy netted positive results by the mid-1970s, resulting in North Korea's admission to the NAM, and commercial links with Western Europe and Japan.⁵⁷ However, in 1976, the DPRK fell on hard times. Growing debt problems compromised efforts to accelerate industrialisation and expand commercial ties, and the North was forced to fall back towards greater economic dependence on Moscow and Beijing - neither of which was generous in furnishing hard currency loans. These

⁵² Mazarr, p. 29.

⁵³ This may have been partly motivated by a politically embarrassing incident in the demilitarised zone in August 1976, when members of the KPA attacked U.S. and South Korean troops who were pruning a tree which straddled ROK and DPRK territory. This resulted in a number of fatalities, and threatened to escalate into a more serious international incident. The situation was defused, but it left Pyongyang's international reputation badly damaged, and undermined its efforts on the diplomatic front. U.S. NSA: Washington: *Confidential Cable #3175* from the U.S. Embassy, Seoul to the DOS, 18 August 1976. Declassified 11 March 1996.

⁵⁴ U.S. NSA, Washington: *Secret NSC Memorandum #2210*, from Mike Armacost to Zbigniew Brzezinski, 28 February 1977. Declassified 24 January 1996.

⁵⁵ *Ibid.*

⁵⁶ U.S. NSA, Washington: *Secret White House Memorandum #2330*, from Zbigniew Brzezinski to the President, 14 March 1977. Declassified 24 January 1996. Under the 1977 version of North Korea's proposal, South Korea would be permitted to sit at a conference on reunification if it renounced anti-communism, stopped the suppression of patriotic people (in the South) and gave up its war policy. According to Brzezinski, these preconditions were 'clearly designed to block rather than facilitate a serious government-to-government dialogue.'

⁵⁷ *Ibid.*

developments must have been all the more discouraging to the North in view of South Korea's phenomenal economic performance throughout the 1970s.⁵⁸

Part III: The rapid expansion of North Korea's nuclear programme, 1978-1991

The rapid expansion of North Korea's nuclear weapons programme began in the late 1970s and early 1980s. Three factors appear to have motivated the decision to push ahead with the development of an indigenous nuclear capability. First, efforts to undermine the U.S.-ROK partnership by exploiting the nuclear issue had failed. In 1977, the United States and South Korea had reaffirmed and strengthened their strategic partnership, leaving the North feeling exposed and humiliated. These feelings were exacerbated by the second factor - Kim Il Sung's failure to obtain reliable security guarantees from Moscow and Beijing. By the late 1970s, the North Korean leader appears to have decided that neither China nor Russia could be relied upon to provide a nuclear umbrella, and that the North would require its own nuclear capability to deter potential nuclear threats and increase its bargaining power. Lastly, it is also possible that domestic instability and economic decline intensified the DPRK's insecurity, reinforcing the siege mentality of the regime and its desire to obtain symbols of power and prestige.

1. The Team Spirit military exercises

South Korea's decision to commit itself to the NPT and abandon its nuclear weapons programme was greeted with relief by most states, but the same cannot be said of North Korea. From Pyongyang's perspective, the alternative was far more threatening. The talk of U.S. military withdrawal from the Korean peninsula, which had driven the South's nuclear ambitions in the 1970s, was suddenly replaced with a new and vigorous U.S. strategic commitment to Seoul. The United States and South Korea had struck a deal in 1977 - Seoul would dismantle its weapons programme, and in return, the United States

⁵⁸ Ibid.

would: provide Seoul with improved conventional weapons, including the F-16 fighter plane; cancel the planned withdrawal of U.S. army divisions; and begin a series of annual 'Team Spirit' joint military exercises between the two states.⁵⁹ At the time, the United States would neither confirm nor deny the deployment of nuclear weapons on the Korean peninsula, but foreign experts on military affairs produced estimates of the number and type of nuclear warheads deployed, and it was generally accepted that the Team Spirit exercises included a nuclear dimension.⁶⁰

Kim Il Sung considered this to be an offensive arrangement, and in the absence of reliable allies, he ordered the rapid expansion of the nuclear weapons programme. This began with the construction of a more powerful reactor at Yongbyon, followed by an ambitious fuel enrichment project, and the development of the infrastructure required to support the nuclear weapons programme.⁶¹ Between 1978 and 1991, this rapid expansion resulted in the recruitment and training of over 2000 nuclear scientists and the construction of over 100 nuclear facilities.⁶² By 1991, the design for a nuclear device and potential delivery systems had also been developed, a testing range had been constructed, and work had progressed to the stage where North Korea was in a position to construct a modest nuclear arsenal.⁶³

2. Pyongyang's 'double-faced' policy

While North Korea was expanding and accelerating its nuclear weapons programme, it publicly denied its existence and reiterated its commitment to

⁵⁹ U.S. NSA, Washington: *Limited Official Use Cable #2230*, from the DOS to the U.S. Mission to International Organisations, Vienna, 10 June 1985. Declassified 18 August 1989.

⁶⁰ U.S. NSA, Washington: *Unclassified Cable #16596* from the U.S. Embassy, Seoul to the DOS, 26 June 1990.

⁶¹ The design was based on older British and French gas-graphite, air-cooled models - the ideal choice for a state with limited industrial capabilities and uncertain foreign supplies of enriched uranium. Having chosen this design, North Korea could follow the plutonium route to a nuclear arsenal, which would minimise foreign involvement. Due to the secrecy surrounding this project, it is difficult to establish precise dates relating to its development, but reports from South Korea suggest that, by September 1982, work was underway on the nuclear core and the nuclear control building, and by December 1984, the reactor's cylindrical smokestack had taken shape. U.S. reconnaissance photographs showed that the reactor had begun operating by January 1986. Mazarr, p. 39.

⁶² Mansourov (1995), p. 43.

⁶³ Pyongyang constructed a high explosive testing site and conducted Scud missile tests in 1989. U.S. NSA, Washington: *Secret Cable #16603* from the U.S. Embassy, Seoul, to the DOS, July 1989. Declassified, 15 April 1994. Evidence indicates that the DPRK requested the use of an underground test site in the Soviet Union for this purpose in the late 1970s or early 1980s, but it is not known whether or not this request was granted by the Brezhnev government. *JPRS-TND-93-003-L*, 22 April 1993.

nonproliferation.⁶⁴ This approach did not resemble the broad diplomatic strategy of the 1970s - instead the United States was the focus of Pyongyang's vitriolic attacks, as the Kim regime attempted to expose the hypocrisy of Washington's position on the nuclear issue. After a slow start, this policy gained momentum in the mid-1980s, after the DPRK agreed to sign the NPT to reduce international pressure and camouflage its nuclear intentions.⁶⁵ From this point onwards, Kim Il Sung regularly expressed his desire for peace and stability, putting forward 'peace loving proposals' such as the creation of a nuclear weapons free zone (NWFZ) on the Korean peninsula, and calling for tripartite talks to discuss the issue of reunification.

This strategy was partly intended to distract international attention from press speculation regarding the sudden acceleration of Pyongyang's nuclear development.⁶⁶ Reports that North Korea had developed the capability to extract plutonium, combined with concerns over Kim Il Sung's refusal to sign the IAEA's nuclear safeguards agreement, raised fear and suspicion that Pyongyang was developing a covert nuclear arsenal.⁶⁷ These anxieties were largely created by reports that, in spring 1989, North Korea had shut down its 30MW reactor for approximately three months.⁶⁸ This led to speculation that, during this time, nuclear fuel rods had been removed from the core in order to provide spent fuel for reprocessing.⁶⁹ Given North Korea's

⁶⁴ A news item on 7 August 1989 gives provides a typical example of North Korea's frequent denials. The reporter insists that 'we are a completely non-nuclear country, without even one unit of nuclear weapons.' On the same day, another reporter states that 'we have declared on more than one occasion that we do not have nuclear weapons ... the fact that we have reduced the People's army forces by 100,000 and advanced a peace proposal for turning the Korean peninsula into a nuclear-free, peace zone clearly shows how sincere our efforts are in alleviating tension.' *FBIS-EAS-89-151*, 8 August 1989.

⁶⁵ The DPRK signed the NPT in 1985, in order to secure the transfer of a nuclear reactor from the Soviet Union. Once the United States heard about this deal, Moscow was put under pressure to push Pyongyang to ratify the treaty. Pyongyang did so in order to obtain the reactor, and also to allay international fears regarding its nuclear development. U.S. NSA, Washington: *Unclassified Cable #7522* from the U.S. Embassy, Seoul to the DOS, July 1989.

Evidence indicates that the Soviet Union intentionally misled the United States over this issue, reassuring policymakers in Washington that North Korea was in 'much too much difficulty economically to be even contemplating the development of nuclear weapons.' U.S. NSA, Washington: *Confidential Cable #8169* from the U.S. Embassy, Moscow to the DOS, June 1984. Declassified 15 April 1994; *Confidential Cable #13030*, from the U.S. Embassy, Moscow, to the DOS, October 1984. Declassified 15 April 1994.

⁶⁶ The decision to sign the NPT did not allay Washington's fears over Kim Il Sung's nuclear intentions. The second reactor at Yongbyon appeared ambitious for the type of research programme thought suitable for North Korea, as U.S. reconnaissance photographs from 1986 revealed. These concerns were magnified in 1988, when further reconnaissance photographs showed evidence of the new enrichment facility at Yongbyon and the high-explosive testing range near by. Reiss, (1995), p. 234.

⁶⁷ An article in the *Washington Post* by Don Oberdorfer entitled 'North Korean's Pursue Nuclear Arms,' started the public speculation on 29 July 1989. *FBIS-Trends-09Aug89-North Korea*.

⁶⁸ *Ibid.*

⁶⁹ *Ibid.*

abundant natural supplies of uranium, a U.S. National Intelligence Estimate at the time concluded that this provided firm evidence that the North was trying to develop nuclear weapons.⁷⁰ These accusations were loudly denied in the DPRK press, which denounced the story as an 'utterly groundless lie' and as 'shameless false propaganda to mislead the world public.'⁷¹ However, behind the bitter rhetoric was a profound sense of discomfort, provoked by an awareness that the exposure of Pyongyang's nuclear activities would lead to even greater isolation.⁷² As a result, Kim Il Sung engaged in a damage limitation exercise. First, he confirmed his commitment to a peaceful negotiated settlement and to the establishment of a NWFZ in Korea.⁷³ Second, he tried to rally international support by exposing the extent of the DPRK's insecurity.⁷⁴

Pyongyang's concerns were outlined in a document circulated by the UN Secretariat in November 1989.⁷⁵ It revealed that Kim Il Sung was prepared to negotiate with South Korea and the United States - but only under certain conditions. Accusing the United States of having turned the Korean peninsula into 'a hotbed of war, threatening peace in Asia and the rest of the world,' Pyongyang urged the United States to withdraw the nuclear warheads deployed in the South, and to end the Team Spirit exercises.⁷⁶ According to the statement, the joint military exercises were regarded by the North as a deliberate 'bid to provoke a nuclear war in Korea.'⁷⁷ If this threat could be removed, Pyongyang would allow the IAEA to inspect North Korea's nuclear facilities, as part of its commitment to a NWFZ in Korea.⁷⁸

⁷⁰ Reiss (1995), p. 236.

⁷¹ *FBIS-Trends-09Aug89-North Korea*.

⁷² U.S. officials in Seoul were convinced at this stage that the DPRK's fears of international isolation would lead to the resolution of the crisis over the issue of inspections. U.S. NSA, Washington: *Unclassified Cable #5442*, from the U.S. Embassy, Seoul to the DOS, 19 June 1990.

⁷³ *FBIS-EAS-89-151*, 8 August 1989.

⁷⁴ *Ibid.*

⁷⁵ U.S. NSA, Washington: *Unclassified Cable #375206* from the Secretary of State, Washington to the U.S. Mission, Vienna, 17 November 1989.

⁷⁶ *Ibid.*

⁷⁷ *Ibid.*

⁷⁸ *Ibid.*

3. The succession question

Given the weight of evidence supporting the case, it seems fair to conclude that insecurity caused by the U.S.-ROK partnership drove much of North Korea's nuclear development during this period of rapid expansion. Whether this external threat was the sole driver, is less clear. It is possible that growing concern over the succession question may have contributed to Kim Il Sung's insecurity, and that he may have seen the nuclear issue as a vehicle for easing the transfer of power to his son, Kim Jong Il. This transfer was organised during the 1970s and became the subject of public scrutiny after the plans were presented at the Sixth Congress of the KWP in October 1980.⁷⁹ From this point onwards, it was a great source of anxiety for the older Kim, who was aware that his son was not trusted by Pyongyang's elite and that many observers were predicting that his rule would be short-lived due to his lack of political legitimacy, poor governing skills and the absence of a military background.⁸⁰

Although - for obvious reasons - there is little evidence to back up his argument, it is possible that the Kims believed that the development of a nuclear capability could help solve Kim Jong Il's legitimacy problem. Nuclear weapons would provide the younger Kim with greater leverage in the international community, helping him: reduce dependence on China and the

⁷⁹ Succession politics in North Korea is based on the struggle to designate a supreme leader (suryong). Unlike other communist systems, this system is not so much rooted in resolving factional infighting within the communist party as it is grooming an heir who can illicit the loyalty of the party and the army, the country's two most powerful institutions. In the last 20 years of his rule, Kim Il Sung engaged in a strategy to clear the way for Kim Jong Il to be his heir. Through constitutional reform in 1972, which concentrated absolute power in the hands of one leader, and periodic purges of the country's various political factions, Kim Il Sung created a homogenous political system devoid of pretenders to the throne. Kim Il Sung's succession strategy can be divided into two phases. The first phase was designed to secure Kim Jong Il's support and control within the KWP, which was completed in the early 1980s when the Dear Leader was formally designated as heir apparent. The second stage was geared toward establishing Kim Jong Il's credentials as a military leader. Unlike his father, who was a guerrilla leader against the Japanese in Manchuria in the 1930s and 1940s, Kim Jong Il has no military background. In a system that puts a premium on military service, this has been interpreted as a critical weakness that undermines his credibility to be supreme leader.

Kim Il Sung tried to overcome this problem by incrementally increasing his son's institutional control over the military. In 1980, Kim Jong Il was appointed first vice chairman of the Central Military Commission. This position allowed him to make major policy statements on a wide range of issues affecting the military. In 1990, he was appointed first vice chairman of the National Defence Committee (NDC), the state institution for overseeing defence policy implementation. Over the next three years, he was made supreme commander of the armed forces (December 1991), promoted to the rank of marshal (August 1992), and appointed chairman of the NDC. Kim Hak Joon, 'The Rise of Kim Chong-il: Implications for North Korea's Internal and External Policies in the 1980s,' *The Journal of Northeast Asian Studies* 2 (June) 1983, pp. 81-92; Ken E. Gause, 'Leadership Politics in North Korea,' *Jane's Intelligence Review* (November) 1994, p. 512.

⁸⁰ Kim Jong Il is also reputed to have an unattractive personality. He is said to be cruel, brutal, mistrustful, unreliable and irresponsible. Whether or not this is true is open to question, particularly as it is based on the testimony of North Korean defectors.

Soviet Union; balance against the U.S. nuclear and conventional presence in South Korea; and present himself as the champion of *juche* socialism and North Korean sovereignty. It has been argued that the sudden acceleration of the DPRK's nuclear programme may have been ordered with this in mind, based on a grand plan to synchronise the transfer of power with the development of a nuclear bargaining chip.⁸¹ This could be pushing the case for domestic motivations too far, but the argument that the internal succession problem added to North Korea's insecurities has credibility.⁸²

4. The festering safeguards issue

Pyongyang's efforts to present itself as a champion of the nonproliferation cause, and its denials over its suspected nuclear activities, were undermined by Kim Il Sung's stubborn refusal to sign the IAEA safeguards agreement. By 1990, North Korea's nuclear diplomacy was ringing hollow, as Washington watched the Yongbyon nuclear complex expand, and South Korea's President, Roh Tae Woo, expressed his dismay over reports that the North was conducting tests of the nonnuclear components of nuclear devices at the test site in Yongbyon.⁸³ Despite the mounting evidence against him, Kim Il Sung denied that any testing had occurred, and continued to deny the existence of a nuclear weapons programme, arguing that the indigenously designed 30MW reactor was part of its civilian energy programme. Rather than easing international concerns, these denials increased the international pressure on Pyongyang to sign the safeguards agreement. This was mainly due to the disturbing news that the Yongbyon reactor contained no electrical lines or transformers, and therefore could not be used to supply electricity to surrounding cities and towns.⁸⁴

⁸¹ Mazarr, pp. 30-32.

⁸² A telegram from the U.S. consulate in Seoul reveals that the South Korea's decisionmaking elite were arguing that Kim Jong Il would pursue a nuclear capability to 'ensure his ability to maintain political control in North Korea after his father's death.' Whether they actually believed this is another matter. It is possible that they were using this argument to try and cement their relations with the United States - if the younger Kim could be presented as a power-crazed individual with selfish motives, officials in Washington would be more sympathetic to the South and the strategic partnership would be more likely to be prolonged. U.S. NSA, Washington: *Secret Cable #341* from the U.S. Embassy, Seoul, to the DOS, September 1989. Declassified 15 April 1994.

⁸³ Reiss (1995), p. 236.

⁸⁴ Mazarr, pp. 39-40.

There was no way for Pyongyang to escape the burgeoning evidence that it was cheating. This was both humiliating and acutely worrying for the Kim regime, which was unsure how it should respond.⁸⁵ In September 1990, the threat of isolation and possible disintegration re-emerged, as Moscow and Seoul both pressured North Korea to sign the safeguards agreement in the wake of their historic meeting in San Francisco.⁸⁶ The DPRK Foreign Minister, Kim Young-nam, voiced Pyongyang's sense of abandonment, warning that North Korea would begin a nuclear programme if Moscow continued to improve its ties with Seoul.⁸⁷ This threat went unheeded, however, as Moscow responded by threatening to cut off all nuclear cooperation if the North's nuclear facilities were not placed under IAEA safeguards.⁸⁸

From Pyongyang's perspective, the options appeared to be narrowing on a daily basis. As both Moscow and Beijing made it clear that they would no longer block South Korea from entering the UN in early 1991, Japan informed the DPRK that it would not establish diplomatic relations, provide reparations, or offer financial assistance until the North implemented IAEA inspections.⁸⁹ By mid-July, Pyongyang had been forced into a corner, and spent the next few months making and breaking promises to initial a safeguards agreement.⁹⁰ This inconsistency was due to confusion within the

⁸⁵ Throughout much of 1990-91, the DPRK vacillated between co-operation and confrontation over the nuclear issue. At the time, U.S. officials in Washington were aware that North Korea feared isolation more than anything else, especially during the break-up of the Soviet Union. This was used to draw the North into negotiations, and at times, it seemed that the safeguards issue would be resolved without too much difficulty. In an incoming cable from the U.S. Embassy, this behaviour is described as Pyongyang's willingness to negotiate due to its 'camouflaged but apparent bid not to be isolated.' U.S. NSA, Washington: *Unclassified Cable #5442* from the U.S. Embassy, Seoul to the DOS, 19 June 1990. However, at the same time, North Korea's verbal attacks on the United States were unrelenting. A joint statement issued by the DPRK government and public organisations in June 1990 declared that 'as long as the U.S. imperialists continue to keep their nuclear weapons in South Korea and threaten and blackmail our people, wielding these nuclear weapons, peace and security on the Korean peninsula and in Asia cannot be maintained.' *FBIS-EAS-91-116*, 17 June 1991.

⁸⁶ At this meeting, the Soviet Union established full diplomatic relations with South Korea, and soon afterwards announced support for Seoul's reunification policy. The reformist Gorbachev regime was not overly enamoured with the ultra conservative DPRK, and was aware of the economic benefits that would follow a rapprochement with the South. Barry K. Gills, *Prospects for Peace and Stability in Northeast Asia: The Korean Conflict*. Conflict Studies No. 278, Research Institute for the Study of Conflict and Terrorism, February 1995.

⁸⁷ 'Moscow, Seoul Link Spurs N. Korea Threat,' *Washington Times*, 2 January 1991.

⁸⁸ Reiss (1995), p. 237.

⁸⁹ North Korea turned to Japan for a lifeline after the Moscow-Seoul meeting in September 1990. Talks on the normalisation of relations with Japan began in Beijing in November 1990, following a successful mission to Pyongyang by Shin Kanemaru in September 1990. North Korea initially demanded \$10 billion in compensation for Japan's colonial period, even if only in the form of low interest loans. However, Japan co-ordinated its diplomacy towards the North with both South Korea and the United States, so economic cooperation between Tokyo and Pyongyang was immediately stunted by the nuclear issue. Gills, pp. 10-11.

⁹⁰ Mazarr, pp. 60-61; Reiss, pp. 237-238.

Kim regime, rather than a deliberate attempt to unnerve the enemy. It was not clear how or if the North could save face, and the international environment was so unpredictable that it was difficult to determine which course of action would be in the national interest.

Part IV: Nuclear brinkmanship, 1991-94

North Korea's nuclear decisionmaking is often portrayed as irrational and inconsistent during the period 1991-94. This is not surprising, given the numerous twists and turns that characterised the nuclear diplomacy of the crisis period. However, although uncertainty appears to have clouded the debate over the inspections issue in Pyongyang during much of 1991, strong patterns in Pyongyang's subsequent behaviour indicate that a degree of clarity returned by September of that year. From that point onwards, the Kim regime engaged in a high-risk game of nuclear brinkmanship, which appears to have been more carefully calculated than is often considered.⁹¹

The Kim regime's nuclear diplomacy comprised of four parts. First, North Korea would admit that it intended to develop nuclear weapons, although the extent of its progress would be kept secret. Second, the nuclear issue would be used to engage the United States in negotiations and end the North's isolation. Third, during negotiations, the threat of a nuclear arsenal would be used as a bargaining chip to gain strategic and economic concessions from the United States. Lastly, during these negotiations, Pyongyang would also use the nuclear issue to defend itself from any possible intervention by Beijing or Moscow. However, neither Seoul nor the IAEA was to play a significant role in this game of nuclear brinkmanship. As far as the DPRK was concerned, they were minor players which could be used to draw the major players into the game, but which could not provide the North with the strategic and economic concessions that it coveted. Washington was the principal target of Pyongyang's nuclear diplomacy, which helps explain why North Korea's nuclear decisionmaking between 1991 and

⁹¹ The point that this game was so risky is sometimes used to challenge the rationality assumption. The expected behaviour of a state facing such severe internal and external threats would not involve a game of nuclear brinkmanship - it would be more likely to try and ensure its survival through a search for more powerful allies. However, from Pyongyang's perspective, this did not appear to be an option.

1994 can only be understood if the emphasis is placed on U.S.-DPRK relations, rather than on the role of the secondary players.

1. North Korea's 'confession' and successful bargaining.

September 1991 to January 1992

In September 1991, North Korea abandoned its policy of denial for the first time. The self-styled image of nonproliferation champion was deliberately removed, and Pyongyang's nuclear intentions were publicly exposed. This marked the beginning of a new phase in the North's nuclear diplomacy - one which was, to a certain extent, forced onto it by the growing evidence that the DPRK's official stance on the nuclear issue had been masking the true situation. The international attention that had been focused on Pyongyang as a result of these revelations had been unwelcome at the time, but as time past and North Korea's economic and international position worsened, the Kim regime became aware that the nuclear issue could be used to its advantage. But first, the DPRK's nuclear denials would have to halt, and its nuclear potential would need to be established in a way that did not provoke a serious international crisis. This was achieved on 25 September 1991, when North Korea informed China that it could and would arm itself with nuclear weapons to defend itself from Western countries if any attempts were made to undermine its socialist system.⁹²

This announcement had the desired effect. In response, the U.S. Defense Department immediately abandoned its policy of 'neither confirm nor deny' and admitted that its troops present in South Korea were armed with tactical nuclear weapons, including a battery of ground-launched 'Lance' missiles.⁹³ This statement provided Pyongyang with the first authentic confirmation of that U.S. nuclear weapons were deployed in the South, giving the Kim regime the ideal opportunity to engage Washington in direct negotiations. Progress was swift. Two days later, President Bush declared that the United States would withdraw from overseas all deployments of

⁹² *FBIS-CHI-91-186*, 25 September 1991.

⁹³ *FBIS-EAS-91-191*, 2 October 1991.

ground-and sea-launched tactical nuclear weapons, in the hope that this might induce the North to sign the safeguards agreement.⁹⁴ This promise was followed by: a further U.S. pledge, in mid-October, to remove all air-launched nuclear missiles from the South;⁹⁵ a joint U.S.-ROK pledge, in early January, to suspend the annual Team Spirit military exercise; and an invitation to New York, in late January, to meet a senior U.S. official to discuss the normalisation of U.S.-DPRK relations.

Pyongyang's reaction to these inducements is highly significant. No move was made to accept the deal until the North was provided with some evidence that the United States intended to uphold its part of the bargain. This came on 18 December 1991, when in a nationally televised speech, President Roh announced that all nuclear weapons had been removed from the South.⁹⁶ This was followed by a vague confirmation by President Bush, who, at a later press conference stated that he had 'heard what Roh said' and was 'not about to argue with him.'⁹⁷ This proved to be enough reassurance for the DPRK, and on 31 December 1991 the Joint Declaration on a Non-Nuclear Korean Peninsula was signed by North and South Korea. This was a far-reaching agreement, which went well beyond the requirements of the NPT and the IAEA safeguards agreement. In signing the declaration, both parties pledged not to 'test, manufacture, produce, introduce, possess, store, deploy, or use nuclear weapons' and that they would 'not possess facilities for nuclear reprocessing and uranium enrichment.'⁹⁸

Pyongyang took further steps in response to the dramatic inducements offered by South Korea and the United States in January 1992. Firstly, the pledge to suspend the annual Team Spirit exercise was met with a reciprocal pledge to sign the IAEA safeguards agreement at some point in the future.⁹⁹ Secondly, Washington's invitation to begin the normalisation of U.S.-

⁹⁴ This policy was also aimed at Russia. The United States hoped that this initiative would persuade Moscow to collect all the tactical nuclear weapons from the non-Russian Soviet republics. Don Oberdorfer, 'U.S. Decides to Withdraw A-Weapons from South Korea,' *Washington Post*, 19 October 1991.

⁹⁵ *Ibid.*

⁹⁶ *FBIS-EAS-91-243*, 18 December 1991.

⁹⁷ *Ibid.*

⁹⁸ National Unification Board, *Intra-Korean Agreements* (Seoul: National Unification Board, 1992). Quoted in Reiss (1995), p. 237.

⁹⁹ *FBIS-EAS-92-011*, 7 January 1992

DPRK relations was followed by immediate action. On 22 January 1992, the U.S. Under Secretary of State for political affairs, Arnold Kanter, and the KWP's secretary for international affairs, Kim Yong Sun, met in New York, where the possibility of a rapprochement between Washington and Pyongyang was discussed.¹⁰⁰ During this historic meeting, Kanter clarified the U.S. preconditions for normalisation, which included, first and foremost, the implementation of IAEA safeguards and a more intrusive bilateral inspection regime. A week later, North Korea signed the IAEA safeguards agreement.¹⁰¹

This was the first direct contact that any representative of the Kim regime had had with the United States - a meeting that Pyongyang had long desired during over 40 years of diplomatic isolation. As far as Pyongyang was concerned, the fact that this meeting took place was proof that its policy was working, and that its economic, strategic, and diplomatic needs would be met. North Korea's new strategy was proving to be highly successful from a strategic and diplomatic perspective, and it is possible that this approach would have continued in order to extract economic concessions, had the United States been prepared to continue playing the game.

2. Cooperation stalls: February 1992 to February 1993

Pyongyang continued to follow its bargaining strategy after signing the safeguards agreement,¹⁰² but soon after agreement had been made, the Bush administration began to question whether it had been too lenient in its policy of unilateral inducements.¹⁰³ By February, new intelligence estimates concerning North Korea's nuclear programme began to undermine U.S. confidence - according to a CIA report, the DPRK was believed to be as little as two months away from building a nuclear weapon.¹⁰⁴ This news shocked

¹⁰⁰ Reiss (1995), p. 239.

¹⁰¹ Michael Z. Wise, 'North Korea Signs Agreement for Inspection of Nuclear Sites,' *Washington Post*, 31 January 1992.

¹⁰² In March 1992, North and South Korea established the Joint Nuclear Control Commission (JNCC) with a mandate to create an inspection regime that could verify the denuclearisation of the Korean peninsula. An agreement was made to conduct the first bilateral inspections by mid-June. This inspection regime was separate to the IAEA regime, but was intended to run in parallel, partly because the IAEA had lost credibility in the eyes of the United States and South Korea - amongst others - since the revelations over the extent of Iraq's nuclear weapons programme after the Gulf War. David E. Sanger, '2 Koreas Agree to A-Inspection by June,' *New York Times*, 15 March 1992.

¹⁰³ Reiss (1995), p. 241.

¹⁰⁴ In February, Robert Gates, the director of the CIA, testified that the DPRK might be within a few months of acquiring a nuclear weapon. Elaine Sciolino, 'CIA Chief Says North Koreans Plan to Make Secret Atom Arms,' *New York Times*, 26 February 1992.

officials in Washington, who took the decision to stall the diplomatic initiative with the North. For the next 14 months, Pyongyang's primary goal was to draw the United States back to the negotiating table, first by cooperating with the IAEA and the South over the inspections issue, and when this failed, by threatening to withdraw from the NPT. These tactics caused nerves to fray in the international community, as observers continued to speculate over the extent of the DPRK's nuclear capability and the intentions of its seemingly irrational leader.

The North hoped that, if it cooperated with the IAEA, the United States would soon overturn its decision to suspend the normalisation talks. This explains the North's decision to release more information than was actually required in its initial declaration to the IAEA. This document, which covered the DPRK's nuclear materials and facilities, included details of more than a dozen previously undeclared nuclear sites.¹⁰⁵ After the declaration had been received in Vienna, the IAEA's director general, Hans Blix, was invited to visit Pyongyang's nuclear facilities in mid-May. While he was there, Blix requested to conduct inspections at additional sites not on the original declaration. Although North Korean officials protested over the use of the word 'inspections' - which they felt undermined their sovereignty - they agreed that representatives from the IAEA could 'visit' any site and installation that they wished to see, regardless of whether it was included in the initial declaration.¹⁰⁶

Pyongyang also took a positive approach with Seoul over the Joint Nuclear Control Commission (JNCC) - the parallel inspection regime that had been set up in March 1992 to carry out bilateral inspections between the two Koreas. Although negotiations over this issue were predictably slow, given the mutual suspicion and hostility that had characterised relations between the two states, the talks proceeded and progress was made. By December 1992, many of the organisational problems associated with implementing the inspections had been resolved, and President Roh had

¹⁰⁵ Reiss (1995), p. 241.

¹⁰⁶ IAEA Press Release 92/25, 15 May 1992.

publicly downgraded the threat posed by the North's nuclear programme.¹⁰⁷ To reward North Korea's behaviour and encourage further cooperation, it was proposed that the DPRK ambassador to the UN, Ho Jong, be invited to Washington to give a talk.¹⁰⁸ However, this proposal was turned down by U.S. officials at the state department, who were not prepared to enter direct negotiations with the North until the nuclear issue had been resolved. The United States also repeatedly rejected the DPRK's calls for another high level meeting, stating that the January visit had been a one-off event, which would not be repeated until Pyongyang fulfilled Washington's preconditions for the normalisation of relations.¹⁰⁹

While Pyongyang was pursuing its policy of cooperation, its international position was deteriorating rapidly. Blix's revelations over the possibility of a secret reprocessing facility in North Korea, combined with the testimony of high-ranking North Korean defectors, troubled the international community, including Pyongyang's traditional allies.¹¹⁰ The Kim regime was becoming increasingly isolated despite its efforts to shake-off its pariah status. In June 1992, following Blix's visit to Yongbyon, Russia and the United States issued a joint statement calling on the DPRK to fully comply with its obligations under the NPT and Joint Declaration, including IAEA safeguards and bilateral inspections.¹¹¹ Shortly afterwards, the EU also increased the pressure on Pyongyang, declaring that relations between Europe and the DPRK could not improve until the inspections issue had been fully resolved.¹¹² These remarks were echoed by the foreign ministers at the G-7 summit in

¹⁰⁷ David E. Sanger, 'North Korea's A-Bomb Plans Seem Less Perilous,' *New York Times*, 18 September 1992.

¹⁰⁸ Reiss (1995), p. 296.

¹⁰⁹ Ibid.

¹¹⁰ Blix's suspicions were triggered during his May 1992 visit, by the progression of North Korea's reprocessing capabilities. Whereas states usually begin with hot cells and move on to a larger pilot plant facility and then to an industrial-scale plant, Pyongyang denied the existence of any pilot plant. This seemed to indicate that Pyongyang was hiding something. During subsequent visits, Blix became concerned about the existence of two sites that North Korea had tried to hide from international inspectors. These concerns were magnified when the results of tests performed on samples taken from the hot cells showed that the North had conducted three separate processing campaigns: in 1989, 1990 and 1991. These findings were outlined in an April 1993 report by Blix to the UN Security Council and General Assembly. *A/48/133, S/25556*, 12 April 1993.

Concerns were also stimulated by the reports of North Korean defectors, such as the former diplomat, Ko Young Hwan, who claimed in April 1992 that the Kim regime was following a policy of cooperation in order to buy time until it could produce its own nuclear weapons. Robert Whyman, 'North Korea Defector Exposes Nuclear Ruse,' *Daily Telegraph*, 10 April 1992.

¹¹¹ Reiss (1995), p. 243.

¹¹² *JPRS-TND-92-019*, 10 June 1992.

Munich and at the meeting of the Association of Southeast Asian Nations (ASEAN) in July.¹¹³

However, the biggest blow to Pyongyang came later in the year, when Beijing and Moscow began to throw their weight behind the West's pressure campaign. Crucially, on 24 August 1992, China and South Korea established diplomatic relations. Although Beijing promised that this move would not affect the 1961 Sino-DPRK friendship and cooperation agreement, it stressed that this was on condition that Pyongyang abandoned its nuclear weapons programme.¹¹⁴ This was followed three months later by President Yeltsin's announcement that Russia would halt all military assistance to North Korea.¹¹⁵ The fact that Yeltsin had made this declaration whilst on an official visit to Seoul, added insult to injury. During his statement, the Russian president promised the South Koreans that the 1961 Russia-DPRK defence pact would either be cancelled or drastically revised, and in addition, Moscow would freeze all nuclear cooperation with the North until Pyongyang had fully implemented IAEA safeguards.¹¹⁶

Pyongyang's economic woes added to this threatening situation. Since the end of the Cold War, North Korea's economy had been in decline. In 1990 the Korean economy had its worst year since the Korean war, with gross domestic product (GDP) and external trade both declining by nearly four percent, and per capita GNP by 5.25 percent.¹¹⁷ The trade deficit grew to \$600 million, reflecting a sharp decline in trade with China, diminishing receipts from Japan, and a deep deficit with the Soviet Union.¹¹⁸ This spiral of contraction continued from 1991 to 1993, as both agricultural and industrial production declined, and food riots confirmed the Kim regime's fears that civil unrest would ensue.¹¹⁹ Pyongyang had hoped that its policy of greater openness and flexibility over the nuclear issue would help to alleviate these dire economic conditions through the provision of financial assistance from

¹¹³ *FBIS-EAS-92-143*, 24 July 1992.

¹¹⁴ *FBIS-EAS-92-166*, 26 August 1992.

¹¹⁵ *JPRS-TND-92-045*, 7 December 1992.

¹¹⁶ *Ibid.*

¹¹⁷ Gills, pp. 11-12.

¹¹⁸ *Ibid.*

¹¹⁹ *Ibid.*

the United States, South Korea and Japan.¹²⁰ However, this financial aid was not forthcoming, and even Pyongyang's traditional economic sponsors - China and Russia - refused to help revive the North's flagging economy.¹²¹ South Korea's experience of rapid economic expansion at this time exacerbated feelings of abandonment.¹²²

Despite refusing to allow Blix access to two undeclared sites, Pyongyang continued a level of cooperation with South Korea and the IAEA, until two events provoked a reassessment of this policy. The first was Seoul's announcement, on 25 January 1993, that the joint Team Spirit military exercise for 1993 was to go ahead in mid-March, with 120,000 troops, including 50,000 from the United States.¹²³ The North had been aware that the possibility of the exercise going ahead had been under consideration by the United States and South Korea since October 1992, but had hoped that its threats to suspend the peace process would force Washington and Seoul to rethink their plans.¹²⁴ The announcement therefore still came as a shock, and was all the more worrying due to Moscow's pledge the previous month to halt all military assistance to North Korea, and to cancel the 1961 defence pact.

The second event involved the IAEA, which was losing patience with Pyongyang over the safeguards issue. After months of increasing fears involving the DPRK's suspected deceptions during international inspections, Blix decided to try to gain access to the two undeclared sites at Yongbyon. On 9 February 1993, he issued an unprecedented request to conduct special inspections, giving North Korea only 10 days to respond before referring the matter to the Board of Governors.¹²⁵ The implications of this demand should

¹²⁰ Reiss (1995), p. 241.

¹²¹ Between 1991 and 1993, China deliberately limited the DPRK's economic dependence in an attempt to prevent itself from taking over the Soviet Union's traditional role as North Korea's traditional financial sponsor. In 1992, Beijing prompted Pyongyang to increase its payments - by way of exports - for the goods and services it was obtaining from China. As a result, Pyongyang's balance of trade deficit with China shrank steadily. By 1994 it was 43 percent lower than its 1991 level, and only slightly higher than its 1990 level. Despite persistent North Korean requests for aid, and the precedent of Moscow's \$1 billion trade imbalance with the DPRK for 1988, Beijing therefore managed to staunch its post-Soviet haemorrhage of concessional assistance to Pyongyang and reduced its trade imbalance significantly despite North Korea's economic crisis. Nicholas Eberstadt, 'China's Trade with the DPRK, 1990-94,' *Korea and World Affairs* 19 (Winter) 1995, pp. 666-673.

¹²² Gills, p. 12.

¹²³ *FBIS-EAS-93-020*, 2 February 1993.

¹²⁴ Reiss (1995), p. 296.

¹²⁵ *Ibid*, p. 247.

not be underestimated, as no such request had ever been issued to any state before. From Pyongyang's perspective, this represented an attack on its sovereignty. It responded in two ways: first, it rejected the IAEA's request; second, it engaged in nuclear blackmail.¹²⁶

3. The North tries blackmail, March to June 1993

Pyongyang's attempt at cooperation and greater openness was calculated to coax the United States back into direct negotiations. By February 1993, it was painfully clear that this policy had failed. Rather than gaining concessions and ending its isolation, the North's insecurity had increased and its goals seemed more distant than ever.¹²⁷ Moreover, Pyongyang had lost prestige and credibility in the process. The final straw came on 9 March 1993, when the United States and South Korea began the Team Spirit exercise. This provoked the North to declare that it was putting the country on semi-war status, and more significantly, it prompted Kim Jong Il's announcement, on 12 March 1993, that he intended to withdraw from the NPT.

The text of the North Korean government's declaration made Pyongyang's position very clear. It described the U.S. and South Korean military exercises as 'a nuclear war rehearsal against the DPRK' and denounced the IAEA's demands for a special inspection as 'an encroachment on the sovereignty of the DPRK, an interference in its internal affairs and a hostile act aimed at stifling our socialism.'¹²⁸ In response to this provocation, North Korea announced that it was 'no longer able to fulfil [its] obligations under the NPT' and therefore 'declares its decision to withdraw unavoidably from the Nuclear Nonproliferation Treaty as a measure to defend its supreme interests.'¹²⁹ Although this threat of withdrawal was a huge gamble for the

¹²⁶ Pyongyang officially refused the request for a special inspection four days after it was received, claiming that the sites were non-nuclear military facilities and off-limits to inspections. Two weeks later, on 25 February, the Board of Governors adopted a resolution calling on North Korea to immediately permit the 'full and prompt implementation of the safeguards agreement. Pyongyang rejected this demand the following day, describing the demand as an infringement on its sovereignty. R. Jeffrey Smith, 'North Korea Gets More Time to Accept Nuclear Inspections,' *Washington Post*, 26 February 1993; 'North Koreans Reject Atomic Inspections,' *New York Times*, 27 February 1993.

¹²⁷ It was assumed that the United States had reintroduced tactical nuclear weapons into South Korea as part of the preparations for the 1993 Team Spirit military exercise. Pyongyang regarded this as a monumental step backwards and as a sign that its policy of co-operation should be abandoned. *FBIS-EAS-93-020*, 2 February 1993.

¹²⁸ 'Partial Text of North Korean Government Statement,' *Reuter* (Tokyo) 12 March 1993.

¹²⁹ *Ibid.*

North, it should not necessarily be seen as an irrational decision. The Kim regime hoped that the importance the international community attached to the NPT would force Washington and Seoul to begin addressing the North's concerns. It would divert attention from the safeguards issue and focus international energy on inducements to keep Pyongyang in the treaty.

Following the announcement, Pyongyang indicated that it was open to negotiation - particularly if the United States was willing to engage in direct talks. Consequently, Pyongyang gave the international community the three months notice required under the terms of the treaty to come up with a mutually acceptable solution to the DPRK's security problems. By mid-April it emerged that the North's blackmailing tactics were succeeding. At this point, the Clinton administration announced that it was willing to hold direct high-level talks with the North, in June, to prevent it from leaving the NPT.¹³⁰ Not surprisingly, Pyongyang agreed to engage in these negotiations, and plans were made for the first U.S.-DPRK talks since the Kanter meeting of January 1992. For the North this represented a breakthrough in its nuclear strategy - Washington was prepared to discuss the North's demands concerning security assurances, inspections of U.S. military bases in the South, and the cancellation of Team Spirit.¹³¹ Moreover, Pyongyang could now discuss the safeguards issue directly with Washington, and apparently without interference from the IAEA or the South. Pyongyang's confrontational nuclear strategy was paying off.

4. Maximum leverage, June 1993-October 1994

Having engaged the United States in direct high-level talks, North Korea's next objective was to extract as many far-reaching concessions as possible during negotiations, using the nuclear issue to obtain maximum leverage. However, this task proved to be extremely difficult due to the conflicting goals and interests of the two Koreas, the United States and the IAEA. Eventually, Pyongyang got what it wanted: high-level talks with Washington on its own

¹³⁰ R. Jeffrey Smith, 'U.S., North Korea Set High-Level Meeting on Nuclear Program,' *Washington Post*, 25 May 1993.

¹³¹ *Ibid.*

terms; special treatment on IAEA inspections; the provision of two light water reactors to help resolve the North's energy problem; positive steps towards the normalisation of U.S.-DPRK relations; and formal security assurances against the threat or use of nuclear weapons by the United States. However, the negotiating process was long and complicated. In the interests of clarity, it is best to divide this process into three stages: June 1993 to February 1994, when the United States' willingness to defuse the crisis resulted in a series of concessions, despite the IAEA's lack of flexibility; March to June 1994, when Seoul's aggressive bargaining and U.S. confusion resulted in another bout of nuclear brinkmanship; and June to October 1994, when Pyongyang's demands were finally met.

i. U.S. concessions, June 1993 to February 1994

At the first meeting between Kang Sok Ju, First Vice Foreign Minister of the DPRK, and Robert Gallucci, U.S. Assistant Secretary of State, Kang agreed to suspend the DPRK's withdrawal from the NPT.¹³² This suspension was significant because it did not represent a complete reversal of Pyongyang's position, a deliberate tactic used by the North to maintain diplomatic leverage. This was used to full advantage after the conclusion of the second round of talks in July, when the United States agreed to cancel Team Spirit and help North Korea obtain light water reactors in order to resolve the nuclear issue.¹³³ Washington laid down strict preconditions in order for this deal to go ahead - demanding that Pyongyang agree to special inspections and direct talks with South Korea before bilateral negotiations could continue.¹³⁴ However, despite pressure from the IAEA, the North managed to circumvent most of

¹³² R. Jeffrey Smith, 'North Korea Won't Quit Nuclear Ban Treaty,' *Washington Post*, 12 June 1993.

¹³³ *FBIS-EAS-93-137*, 20 July 1993.

¹³⁴ *Ibid.*

Washington's demands.¹³⁵ By mid-November 1993, Washington had agreed to cancel Team Spirit *before* the inspections and had agreed to postpone the special inspections until the end of the negotiating process.¹³⁶ In return, Pyongyang agreed to open direct talks with Seoul and to continue negotiations with the IAEA.

ii. The fuel rods crisis, March to June 1994

Washington had promised Pyongyang that the North-South talks would go smoothly, and that Seoul would cooperate. Problems arose when the South adopted an aggressive and inflexible stance at the talks at Panmunjom, insisting that the DPRK accept its own agenda. Pyongyang then tried to use the nuclear card to increase its leverage, impeding the IAEA inspections and threatening that 'Seoul is not very far from here. If war breaks out, it will be a sea of fire.'¹³⁷ These blackmailing tactics were adopted throughout March and April, as Seoul refused to negotiate, and the United States sent military reinforcements to the South.¹³⁸ The climax came in May, when North Korea telexed the IAEA to inform it that it had begun removing fuel from the nuclear reactor.¹³⁹ This sent a clear message to Washington and Seoul - either they negotiate on Pyongyang's terms, or the fuel would be reprocessed and soon they might be facing a nuclear-armed North. Initially, this strategy backfired, as the ROK prepared for war and the United States called on the UN Security Council to endorse a series of sanctions against Pyongyang.¹⁴⁰ But ultimately,

¹³⁵ The IAEA followed a different agenda to that of Washington during this period, exerting far more pressure on Pyongyang over the issue of inspections. After the talks in July 1993, Washington had persuaded Pyongyang to agree to allow the IAEA to perform some regular checks on the facilities at Yongbyon. Gallucci had assured Kang that these would consist of routine checks on sites that were already under IAEA safeguards. However, when the inspections took place in August, the representatives from the IAEA insisted on access to more sites than they had seen before. They wanted inspections 'a la carte.' Annoyed that its special NPT status was being challenged, Pyongyang refused access to the inspectors. These problems were augmented in September, when the IAEA informed the North that the special inspections would have to go ahead before September 28. Again, Pyongyang refused, insisting that they would only be able to perform the limited activities that had been carried out in August. The United States put pressure on the IAEA to relax its demands, which it eventually did in February 1994, by agreeing to remove certain sites from the inspections list. Despite the compromise, this episode had caused tension to rise, particularly in the South, where officials began a reassessment of the ROK's nuclear policy. Reiss (1995), pp. 254-265.

¹³⁶ David E. Sanger, 'U.S. Revising North Korea Strategy,' *New York Times*, 22 November 1993; Ruth Marcus and R. Jeffrey Smith, 'U.S., South Korea Shift Strategy on North,' *Washington Post*, 24 November 1993.

¹³⁷ Quoted in Reiss (1995), p. 266.

¹³⁸ R. Jeffrey Smith and Ann Devroy, 'Clinton Orders Patriot Missiles to South Korea,' *Washington Post*, 22 March 1994.

¹³⁹ *JPRS-TND-94-013*, 24 June 1994.

¹⁴⁰ Julia Preston, 'U.S. Unveils Proposal for Sanctions,' *Washington Post*, 16 June 1994.

the Kim's nuclear bargaining chip worked again, providing the North with the concessions that it had been pursuing.

iii. The Agreed Framework, June to October 1994

By June 1994, informal negotiations between Pyongyang and Washington were under way, thanks to the initiative of Jimmy Carter, who accepted a long-standing invitation to visit Kim Il Sung. He was openly critical of the confrontational approach that the Clinton administration had taken over the proliferation issue, and decided to pursue his own agenda to prevent another Korean conflict.¹⁴¹ His diplomatic mission, which was accompanied by a crew from the U.S. Cable News Network (CNN) presented Kim Il Sung with an opportunity to raise international awareness of North Korea's deep insecurities, especially its feelings of alienation, the threat posed by the U.S.-ROK strategic alliance, and the North's severe economic difficulties. During his meeting with the North Korean leader, Carter claimed that the United States recognised the difficulties that Pyongyang was facing, and had decided to stop the sanctions activity in the UN, and was willing to engage in another round of direct talks with the DPRK.¹⁴² The results were almost immediate - on 22 June Kim Il Sung agreed not to reprocess the spent fuel from the reactor, and to freeze its nuclear weapons programme.¹⁴³

After another round of negotiations, the U.S.-North Korean Agreed Framework was concluded in October 1994.¹⁴⁴ From Pyongyang's perspective, this represented the ultimate reward for its nuclear diplomacy. Under the terms of the agreement, North Korea would halt the operations and infrastructure development of its nuclear programme, and in return, the United States would provide North Korea with a package of economic and diplomatic benefits.¹⁴⁵ When this deal is examined in terms of costs and benefits, it is not

¹⁴¹ David E. Sanger, 'Carter Visit to North Korea: Whose Trip Was It Really?' *New York Times*, 18 June 1994.

¹⁴² *FBIS-EAS-94-117*, 17 June 1994.

Apparently, Washington had agreed to no such thing, but Carter believed that this was the only way that the crisis could be resolved, so he took it upon himself to make promises and hope that the White House would later endorse them. Reiss (1995), pp. 272-273.

¹⁴³ Ruth Marcus and R. Jeffrey Smith, 'North Korea Confirms Freeze; U.S. Agrees to Resume Talks,' *Washington Post*, 23 June 1994.

¹⁴⁴ Agreed Framework Between the United States of America and the Democratic People's Republic of Korea. Geneva, 21 October 1994. Printed in *Arms Control Today* (December) 1994, p. 19.

¹⁴⁵ *Ibid.*

surprising that Pyongyang agreed to forfeit its nuclear development in return for such a comprehensive package of concessions. North Korea would receive two light water reactors, financed by South Korea and Japan at an estimated cost of \$4.5 billion. These reactors would be supplied, if possible, by April 1995, and in the interim period, Washington agreed to provide Pyongyang heavy oil at no cost.¹⁴⁶ This would compensate for the electricity which the North could have generated if it completed the construction of its 50 and 200MW reactors. In addition, the United States promised to establish full diplomatic relations with the DPRK once the nuclear issue had been successfully resolved, and agreed to relax the U.S. economic embargo, reducing barriers to trade and investment.¹⁴⁷ But perhaps the most significant concession, was Washington's pledge that it would provide formal negative security assurances, promising not to use nuclear weapons against North Korea as long as it remained a member of the NPT.¹⁴⁸

Part V: Empirical conclusions

Five major empirical conclusions can be drawn from this analysis of North Korea's nuclear policy.

1. Perceived conventional and nuclear threats posed by the U.S.-ROK strategic partnership created much of the insecurity that fuelled North Korea's adversarial nuclear policy.
2. Internal vulnerabilities added to Pyongyang's insecurities and may have increased proliferation pressures, especially since the end of the Cold War. In particular, the succession question appears to have undermined the leadership's confidence and fostered its desire for symbols of power and authority.
3. North Korea's international isolation was a direct proliferation cause. Pyongyang's failure to acquire a reliable ally during the 1960s was partly responsible for Kim Il Sung's decision to pursue an indigenous nuclear capability. Furthermore, as the North's isolation increased, its nuclear stance

¹⁴⁶ Nicksch, p. 7.

¹⁴⁷ Ibid., p. 9.

¹⁴⁸ Ibid., p. 11.

became more adversarial. The withdrawal of Soviet and Chinese economic assistance at the end of the Cold War was particularly significant.

4. Kim Il Sung's determination to maintain North Korea's particular brand of socialism led to Pyongyang's isolation. This alienated not only the West, but also China and the Soviet Union - both displayed a high level of ambivalence towards the unruly and fiercely independent state.

5. North Korea used the nuclear issue to fulfil its multiple foreign and security policy goals. During the 1970s, Kim Il Sung pledged his commitment to nonproliferation to gain diplomatic leverage over South Korea. During the 1980s, the North appears to have been committed to developing a nuclear capability to function as a strategic equaliser. More recently, North Korea has used the nuclear issue as a bargaining chip, to draw the United States into negotiations in order to obtain military, economic and political concessions.

Part VI: Theoretical Analysis

This section evaluates the extent to which three different versions of neorealism - parsimonious neorealism, balance of power theory, and structural realism - can offer insight in North Korea's nuclear activities since the 1960s. The main focus will be on trying to find a theoretical explanation of Pyongyang's behaviour from 1991-94, during which time the world looked on in horror, fearing that Kim Il Sung was unconstrained by the usual limits imposed by rationality. But was Pyongyang's nuclear strategy irrational? Can it be explained using the rational actor model? Are important factors overlooked by the rational actor model?

1. Parsimonious neorealism

In 1995, Waltz argued that the end of bipolarity would result in the spread of nuclear weapons, due to the withdrawal of nuclear umbrellas offered by the superpowers to weaker states during the Cold War. In particular, he predicted that strong proliferation pressures would be unleashed in Northeast Asia - where the collapse of the Soviet-DPRK defence pact would encourage

Pyongyang to build a nuclear arsenal.¹⁴⁹ This would inevitably provoke further proliferation in the region, 'especially when confidence in America's extended deterrence wanes as the bipolar world disappears.'¹⁵⁰

The empirical record indicates that the decline in cooperation between Moscow and Pyongyang did influence North Korea's more confrontational approach to the nuclear issue in the late 1980s and early 1990s, although perhaps not entirely for the reasons that Waltz outlines. At the end of the Cold War, Moscow reduced its military, nuclear, technological and civil assistance for North Korea until eventually it even suspended it. Waltz's argument suggests that the greatest shock came in December 1990, when the Soviet Union committed itself in the Moscow Declaration to a peaceful solution of the Korean question and thereby signalled that it would remain neutral in the case of a Korean conflict.¹⁵¹ This would have removed any hope that North Korea had once had of sheltering under a Soviet nuclear umbrella.¹⁵² From a structural perspective North Korea's adversarial approach to the nuclear issue in the 1990s can be seen as a response to this situation. Without the security offered by Soviet cooperation, Pyongyang was vulnerable and willing to take drastic measures to ensure its survival. Under multipolarity it was more difficult for North Korea to acquire an ally to replace the Soviet Union due to the decline in superpower competition. What Kim Il Sung wanted, therefore, was the next best thing - an indigenous nuclear capability.

Although this analysis does have value, it is incomplete and distorted. Most significantly, the point that the structural explanation can only account for North Korea's behaviour after the Cold War had ended, casts doubt on its overall credibility. Based on structural expectations of behaviour,

¹⁴⁹ Sagan and Waltz, pp. 40-41.

¹⁵⁰ Ibid., p. 41. This argument has been used by other theorists, although they tend to also include additional non-structural explanations of North Korea's nuclear development. For example, Wilfried von Bredow, Thomas Jager and Gerhard Kummel, argue that 'it may well be that the repercussions of the collapse of the bipolar post-World War II order have been most dramatic in the Pacific region. Even more, one may predict that the most serious changes are still impending. In this context developments on the Korean peninsula will be among the most decisive.' However, they also identify the internal characteristics of the state as a significant driver of future developments in the region. Wilfried von Bredow, Thomas Jager and Gerhard Kummel, 'North Korea Between Isolation, Dissociation and Integration,' *The Korean Journal of National Unification* 6 1997, pp. 101-149.

¹⁵¹ Bredow, Jager and Kummel, p. 113.

¹⁵² Ibid., p. 114.

North Korea would not have developed an indigenous nuclear capability before the late 1980s, yet the empirical record indicates that Kim Il Sung may have taken a proliferation decision as early as 1962, and had certainly decided to develop an independent nuclear capability by the 1970s. How can this be explained in structural terms, given that bipolarity is supposed to act as a brake on nuclear proliferation? Part of the problem is that predictions and explanations derived from the concept of polarity are misleading. During the Cold War, China may not have been a superpower, but it was a major player in Korea. The relationship between North Korea and China reduced Moscow's commitment to Pyongyang, and vice versa, especially after the Sino-Soviet rift in 1962. The security arrangements offered by China and the Soviet Union were therefore tenuous and unreliable, leaving North Korea feeling insecure and in need of an independent nuclear capability. Given that it is questionable whether North Korea ever felt able to rely on a nuclear umbrella during the Cold War, why should the removal of an unreliable shield have had such a dramatic impact on Pyongyang from 1991 to 1994? This suggests that additional crucial factors were involved.

2. Balance of power theory

Leaving aside the polarity concept, traditional balance of power theory provides a more convincing explanation for North Korea's nuclear development. The threat posed by the provision of a U.S. nuclear umbrella to the South created insecurity in the North, causing Pyongyang to attempt to balance against this threat. Pyongyang's first strategy was to try and balance externally. Kim Il Sung approached the Soviet Union for a nuclear umbrella in the hope that this would act as an extended deterrent against the U.S. presence in the South. It is not clear whether the North Korean leader managed to obtain a nuclear commitment from Moscow. The defence pact of 1961 may have had a nuclear dimension, but it is possible that Soviet Union adopted the same approach as it did with India - an agreement to supply economic and technological assistance for Pyongyang to develop its own nuclear capability. Whatever the actual outcome of the negotiations, Kim Il

Sung's faith in Soviet cooperation declined as a result of the Cuban missile crisis and the Sino-Soviet rift. Although he could obtain concessions from China, relations between Beijing and Pyongyang were constantly strained. As a result, the decision was taken to balance internally against the threat from the U.S. nuclear presence in the South in the 1960s and 1980s, and against the threat of an indigenous South Korean nuclear capability in the 1970s. Every time these threats increased, Pyongyang took another step towards the development of an independent nuclear capability.

This provides a strategic explanation for the development of North Korea's nuclear weapons programme. From North Korea's perspective, the reasons for not going nuclear were outweighed by the perception of a growing strategic need for nuclear weapons. This does not, however, suggest that Pyongyang intended to employ nuclear weapons in an attack on the South. Such behaviour would be irrational for two reasons. First, if the North dropped a nuclear weapon on South Korea, this would present the obvious problem of irradiating Pyongyang's own troops, rendering territory uninhabitable in the North and South, and killing large numbers of ordinary South Korean civilians. Second, any nuclear weapons that Pyongyang developed would be strategically worthless due to the U.S. nuclear umbrella. Nuclear retaliation by the U.S. would have been politically acceptable, and would take just a few minutes to arrive on North Korean soil. It seems more likely, therefore, that Pyongyang was balancing against threats and that it developed a nuclear capability for defensive purposes: to deter U.S. nuclear strikes against the North and to offset the shift in conventional military superiority to the South.

This could also partly explain North Korea's nuclear posturing in the 1990s. The withdrawal of Soviet and Chinese military assistance would have had a devastating impact on the North, which would have felt vulnerable to a nuclear or conventional attack from the South. This would have intensified existing fears that Seoul might launch a military campaign to reunify Korea on its own terms. Between 1987 and 1991, North Korean military imports had totalled \$4.6 billion, \$4.2 billion of which had originated in

the Soviet Union. From 1991, Russia demanded that bilateral trade be conducted on a hard-currency basis, which spelt disaster for the cash-strapped DPRK. As a result, Soviet exports of military goods such as the MiG-29 aircraft were drastically reduced. This situation was greatly exacerbated by China's decision to curb North Korea's preferential treatment. Beginning in 1990, Pyongyang had to pay for its imports from China in hard currency. Consequently, when Soviet military assistance was suspended, North Korea could not turn to its oldest ally for help.¹⁵³ Under these conditions, Pyongyang may have turned to nuclear weapons as a strategic equaliser, intended to deter nuclear and conventional threats from the South.¹⁵⁴ By signalling rather than declaring its nuclear capability to the international community, North Korea could balance against the southern threat without exposing itself to unnecessarily high levels of risk. Pyongyang's nuclear weapons programme would therefore function as a recessed deterrent.

Pyongyang's decision to freeze its nuclear weapons programme in 1994 can also be explained using traditional balance of power theory. During negotiations, the United States pledged to terminate the joint Team Spirit military exercises and to withdraw its nuclear weapons from South Korean soil. However, the threat of a direct nuclear attack from U.S. territory remained, which explains Pyongyang's determination to continue its nuclear posturing after the Washington's initial promises. These fears were dealt with during negotiations over the Framework Agreement between June and October 1994. Under the terms of the agreement, Washington pledged that it would provide formal negative security assurances to Pyongyang, promising not to use nuclear weapons against North Korea as long as it froze its nuclear

¹⁵³ To find some way out of this malaise, Pyongyang engaged in the arms trade. Missile technology and nuclear technology were traded (partly for oil) with states like Syria, Iran and Iraq. North Korea reportedly sold advanced Scud-C missiles to nations in the Middle East: 90 to 100 to Iran, and 20-24 to Syria (including mobile launchers) after the Gulf War. Armaments goods were apparently also sold to terrorists. Gerald Segal, 'Managing New Arms Races in the Asia/Pacific,' *Washington Quarterly* 15 1992, p. 85; Lee Sun-ho, 'North Korea's Development of Weapons of Mass Destruction,' *Korea Focus* 4 1996, p. 48; David C. Kang, 'Preventative War and North Korea,' *Security Studies* 4 (Winter) 1994-95.

¹⁵⁴ Scholars who use this argument include: Andrew Mack, 'North Korea and the Bomb,' *Foreign Policy* 83 (Summer) 1991; Andrew Mack, 'The Nuclear Crisis on the Korean Peninsula,' *Asian Survey* 33 (April) 1993; Jin-Hyun Paik, 'Nuclear Conundrum: Analysis and Assessment of Two Koreas' Policy Regarding the Nuclear Issue,' *Korea and World Affairs* 17 (Winter) 1993; Young Sun Song, 'The Korean Nuclear Issue,' *Korea and World Affairs* 15 (Fall) 1991; Seong W. Cheon, 'National Security and Stability in East Asia: The Korean Peninsula.' PPNN Core Group Meeting Paper, Japan, November 1992.

weapons programme and remained a member of the NPT. As a result, by October 1994, the strategic insecurities that had been causing North Korea's adversarial behaviour were drastically reduced and North Korea stood to lose more than it would gain if it continued the country's nuclear development.

This provides more insight into conditions and motivations that have influenced North Korea's nuclear development, but it leaves certain questions unanswered. First, why did North Korea's nuclear weapons programme progress in stops and starts? Given that Pyongyang was aware of the Seoul's nuclear activities during the mid-1970s, why was a crash programme not implemented? The empirical record shows that both the Soviet Union and China were prepared to offer North Korea economic and technical assistance to develop its own nuclear capability, so why did the North only begin the rapid acceleration of its nuclear weapons programme in the late-1970s? Second, if Pyongyang's nuclear policies were determined by purely strategic considerations, why did North Korea join the NPT in 1985? Third, if military factors were the principal driver of the North Korean nuclear weapons posturing, why did Pyongyang agree to freeze its nuclear programme on the basis of weak unilateral security assurances from the United States, which were not even legally binding? Traditional balance of power theory cannot provide answers to these questions.

3. Structural realism

The empirical analysis showed that regime insecurity was one of the key factors conditioning Pyongyang's approach to the nuclear issue. Pyongyang's political predicament is similar to that of non-state actors that resort to terrorism: deep dissatisfaction with the status quo, but an inability to alter it through the usual channels available to them within the system, due to a lack of shared interests; and intense insecurity due to external hostility to - and uncertain loyalties within - the organisation. By bringing the unit level into the analysis, structural realism can explain why some countries are more proliferation prone than others in the international system - the internal characteristics of the state or regime influence threat levels and responses.

Since its inception, the DPRK has suffered from a severe lack of attributive power, which has created strong proliferation pressures. North Korea lacks territorial integrity, international recognition, resource security, and political legitimacy.¹⁵⁵ These weaknesses have generated serious challenges to North Korea's survival, creating a siege mentality amongst the ruling elite. Furthermore, North Korea's attributive power has recently declined from its already meagre origins. Political legitimacy at the domestic level always rested on the charismatic personality of one man - Kim Il Sung. Throughout his reign, Kim Il Sung was acutely aware that, unless his power could be successfully transferred to an individual of equal standing and respect, the survival of the regime would be in jeopardy. As a result, he spent over twenty years engaged in political manoeuvres to secure the succession of his son. However, by the end of the end of the Cold War, economic hardship and combat fatigue was eroding his own popularity, and reports on his son's position suggested that he lacked political support. Furthermore, the Stalinist political model on which Kim Il Sung built his regime - which had been steadily losing legitimacy since the 1940s - was universally decried by 1989. North Korea's political system looked outdated and bankrupt from the outside, and Pyongyang's political leaders were uncertain how long it could survive before domestic support collapsed. These concerns are reflected in the government's classification of the population in 1990: only 27 per cent were thought to belong to the core group of the most loyal; 22 per cent were considered to be waverers; and more than half of the population (51 per cent) were deemed 'incurable heretics.'¹⁵⁶

This lack of attributive power has undermined Pyongyang's interaction capacity. As a result, North Korea has felt under threat from inside and outside its borders. At first, Kim Il Sung had hoped that the shared

¹⁵⁵ Theorists and empiricists who identify domestic factors as important determinants of North Korea's nuclear behaviour include: Howlett, p. 183; Peter Hayes, 'North Korea's Nuclear Gambits.' *Director's Series on Proliferation* 2 (September) 1993, pp. 29-36; James Cotton, 'The North Korea-United States Nuclear Accord: Background and Consequences.' *Korea Observer* 26 (Autumn) 1995, p. 327; Selig S. Harrison, 'The North Korean Nuclear Crisis: From Stalemate to Breakthrough.' *Arms Control Today* 24 (November) 1994, p. 18; Yoshio Okawa, 'North Korea's Bid to Withdraw from the NPT,' in John Simpson and Darryl Howlett (eds.), *The Future of the Non-Proliferation Treaty* (London: Macmillan, 1995), pp. 152-153; Paul Bracken, 'Nuclear Weapons and State Survival in North Korea.' *Survival* 35 (Autumn) 1993, p. 138; Denny Roy, 'North Korea as Alienated State.' *Survival* 38 (Winter) 1996-97, p. 23.

¹⁵⁶ Richard L. Grant, 'Juche's Last Gasp.' *Korean Journal of Defense Analysis* 6 1994, p. 139.

ideological opposition of the communist states to the capitalist West would a) automatically increase North Korea's interaction with China and the Soviet Union thereby reducing the external military, political, and economic threats to the regime and b) provide Pyongyang with political legitimacy to protect it from internal challenges. But during the 1960s, it became clear that Pyongyang could not count on this cooperation. As a result, Kim Il Sung has used the nuclear issue to provide the insecure and vulnerable regime with the means to increase its attributive power and interaction capacity.

During the 1970s, Kim Il Sung pursued a two pronged strategy: he declared his commitment to nonproliferation in an attempt to gain diplomatic recognition from the West and economic and technical assistance from the East but, at the same time, secretly pursued a nuclear capability to guard against external threats in case the diplomatic initiative did not succeed. At this stage, he did not implement a crash nuclear programme in response to reports that the South was developing an independent nuclear capability, because Pyongyang stood to gain more politically and economically by using the nonproliferation issue to cast Seoul as a pariah and itself as legitimate and responsible international actor. However, during the 1980s, the balance shifted from the diplomatic to the military initiative, as the former failed to produce results and the latter was accelerated due to increased military threat perceptions.

Kim Il Sung's strategy of publicly promoting nonproliferation whilst privately pursuing an independent nuclear capability became unfeasible after Pyongyang was caught cheating in 1989. New tactics were required to increase North Korea's political and economic leverage. However, due to North Korea's low attributive power, its options were limited. It was at this point that Pyongyang's political leaders began to use the nuclear issue as a) a bargaining chip to engage the United States in negotiations in order to compensate for the loss of Chinese and Soviet economic, technological and military cooperation, and b) a political tool to foster domestic support for the

regime.¹⁵⁷ The strategy succeeded: between 1991 and 1994, Pyongyang's drew the United States into official diplomatic relations for the first time, gaining strategic, political and economic concessions in the process. Under the terms of the Framework Agreement, Washington and Seoul agreed to lift the trade embargo, promised economic cooperation and security assurances, and confirmed the sovereignty and equal status of the North Korean political system. Pyongyang therefore agreed to freeze its nuclear programme because it stood to gain more economically and politically from cooperation than it did from continuing its adversarial stance. Moreover, by October power had passed (though unofficially) to Kim Jong Il and the succession seemed relatively secure.

What does this say about North Korea's nuclear behaviour and explanations derived from structural realism? First, the rational actor model *can* explain Pyongyang's nuclear diplomacy - though risky, blackmailing tactics were certainly not irrational given the internal and external threats faced by the Kims' regime. North Korea's nuclear diplomacy may have seemed erratic and irrational to those looking for strategic explanations, but they seem less so when the multiple, and sometimes conflicting, interests of the state are taken into account.¹⁵⁸ Second, Pyongyang's nuclear decisionmakers were driven as much by political and economic concerns as they were by strategic considerations. North Korea's nuclear and nonproliferation policies therefore have to be seen in the context of the Kim regime's broader foreign policy goals. This can only be achieved theoretically if the concept of power is disaggregated, and the definition of interests is expanded, as they are in complex versions of neorealism. Third, the characteristics of the state played an important role in North Korea's nuclear development. Structural realism can account for this, using the concepts of

¹⁵⁷ Those who argue that North Korea has used nuclear weapons as a diplomatic weapon to provide bargaining leverage to deal with external threats include: Howlett, p. 184; Pan Suk Kim, 'Will North Korea Blink? Matters of Grave Danger.' *Asian Survey* 34 (March) 1994, p. 269; Leon V. Sigal, 'The North Korean Nuclear Crisis: Understanding The Failure of the "Crime-and -Punishment" Strategy.' *Arms Control Today* (May) 1997, p. 4; Young Whan Kihl, 'Confrontation or Compromise on the Korean Peninsula: The North Korean Nuclear Issue.' *Korean Journal of Defence Analysis* 6 (Winter) 1995, p. 111.

¹⁵⁸ Many observers have argued that North Korea's nuclear behaviour during the 1990s was irrational because it undermined national security interests. Those who argue this tend to focus on the particular eccentricities of the leadership as the cause of this behaviour. Hayes (1993), p. 29; Roy, p. 23; Cotton, p. 96.

attributive power and interaction capacity. When these were low, Pyongyang had few foreign policy options and therefore used the nuclear issue to attempt to ensure its survival.

There are, however, certain weaknesses in structural realist explanations and predictions of North Korea's nuclear behaviour. The theory suggests that Pyongyang's principal goal has always been survival. This is not inaccurate, but it does overlook the point that North Korea wishes to survive 'in its own way,' without reference to outside standards and values.¹⁵⁹ North Korea is known as the 'hermit kingdom' for this reason - outside contact is deliberately limited in order to prevent ideological challenges to the regime. There is therefore a clash between the theory that interaction capacity ensures survival, and the point that interaction may bring ideological threats that undermine the survival of the Stalinist regime. This partly explains the strained relations between North Korea and its communist counterparts - Pyongyang refused to dance to the tune of its more powerful allies and therefore failed to acquire reliable partners. It also throws doubt on the Framework Agreement. Despite the strong economic incentives for North Korea to cooperate with the West, there are also powerful forces that are suspicious of the ideological intentions of the United States, Japan and South Korea. Indeed, even cautious experimentation has its opponents in Pyongyang.¹⁶⁰ Such fears and insecurities and their outcomes can only truly be understood if complex unit level factors such as culture and identity, competing organisations and political factions and the beliefs of influential individuals are taken into account.

¹⁵⁹ Cotton, p. 103.

¹⁶⁰ This attitude is illustrated by the editorial in *Nodong Sinmun*, 4 July 1992: 'Following the imperialists' peaceful transition strategy, the South Korean authorities are dreaming of reunification through absorption and victory over communists based on the system of so-called liberal democracy by inducing us to open up. However, this is a foolish fantasy.' *SWB, FE/1426, A2/3*, 7 July 1992.

Chapter Six

Ukraine's Nuclear Weapons Policy

I have many friends in top positions in Moscow. After the third glass of vodka they always ask me the same question: "what do you need this independence for?"

**Andrei Makarenko,
Ukraine's former Deputy Foreign Minister.¹**

Ukraine's nuclear experiences present a particularly complex and unusual challenge to theorists attempting to explain or understand the dynamics of nuclear proliferation. Whereas nuclear weapons programmes were intentionally and gradually developed in India, South Africa and North Korea, Ukraine, Belarus and Kazakhstan suddenly inherited their nuclear arsenals when the Soviet Union collapsed in 1991. In December 1991, Ukraine became the disputed owner of the world's third largest arsenal of strategic nuclear weapons, after the United States and Russia. The nuclear weapons stationed on Ukrainian soil consisted of over 1500 strategic nuclear weapons and over 2500 tactical nuclear devices, which together accounted for as much as 15 per cent of the Soviet Union's combined arsenal.² Unlike their predecessors, Ukraine, Belarus and Kazakhstan emerged on the international stage as nuclear weapon states with ready-made nuclear capabilities, and with no experience of defence policies or nuclear diplomacy. This unique situation ensured that Ukraine and the other

¹ Quoted in Andrew Cowley, 'Unruly Child: A Survey of Ukraine,' *The Economist* (7 May) 1994, p. 14.

² In December 1991, the strategic nuclear weapons arsenal in Ukraine consisted of: 130 SS-19 'Stiletto' ICBMs; 46 SS-24 'Scalpel' ICBMs; and approximately 40 strategic bombers. Next to the Russian Federation, Ukraine also possessed the largest civilian nuclear power programme in the Former Soviet Union (FSU). Its 14 nuclear reactors placed Ukraine among the world leaders in terms of operational reactors and total capacity of nuclear power plants. Ukraine also possessed a well-developed nuclear research infrastructure, with a 10 megawatt research reactor at the Institute for Nuclear Research in Kiev and a 200 kilowatt research reactor at the High Marines School in Sevastopol. Another nuclear research centre, the Physical-Technical Institute at Kharkiv, was a leader in the development of automated equipment for nuclear installations and also stored, on-site, up to 75 kilograms of uranium, enriched to 90 per cent. Ukraine, unlike Kazakhstan and Belarus, also inherited a large military industrial base equipped to manufacture ballistic missiles. The Southern Machine Building Plant in Dnipropetrovsk was the largest missile factory in the world, employing 50,000 people. In addition to this, Ukraine was estimated to have had approximately 15 per cent of the FSU defence plants and military research and development (R&D) facilities.

Notably absent in Ukraine, however, were: ICBM missile test flight ranges; a site for nuclear weapons tests; uranium enrichment and plutonium reprocessing capabilities; and fuel and closed production cycles for many defence products. Marco de Andreis and Francesco Calogero, *The Soviet Nuclear Weapon Legacy*. SIPRI Research Report No. 10 (Oxford: Oxford University Press, 1995), p.5; Taras Kuzio, 'Ukraine's Military Industrial Plan,' *Jane's Intelligence Review* (August) 1994, pp. 352-355; Taras Kuzio, 'Ukraine's Arms Exports,' *Jane's Intelligence Review* (February) 1994, p. 65; William C. Potter, *The Politics of Nuclear Renunciation: The Cases of Belarus, Kazakhstan and Ukraine*. Occasional Paper No. 22 (Washington, DC: The Henry L. Stimson Center, 1995), pp. 9-10; Andrew Wilson, 'Ukraine: The Economy,' in *Eastern Europe and the CIS 1994: A Political and Economic Survey* (London: Europa Publications, 1994), p. 683.

nuclear members of the Former Soviet Union (FSU) were launched straight to the centre of the international stage, with no time to adjust to their newly acquired independence, and with the eyes of the world on their every move.

In Ukraine's case, this baptism of fire - combined with intense insecurity during the difficult process of state-building - resulted in a period of international uncertainty, as Russia and the West feared that Ukraine would attempt to join the 'nuclear club.' Eventually, in November 1994, Ukraine joined the NPT after nearly three years of tortuous negotiations. During this period, Ukraine's nuclear diplomacy was extremely complex. On numerous occasions, the President, the executive and the Rada (the Ukrainian parliament) each took a different line. In addition, domestic, regional and international developments created pressures for frequent policy adjustments. But despite this complexity, it is possible and helpful to divide Ukraine's official nuclear stance into three phases: cautious non-nuclear (until late December 1991), unconditional non-nuclear (from late December 1991 until March 1993) and nuclear bargaining (from March 1992 to November 1994). This chapter presents an empirical analysis, followed by a theoretical analysis, of Ukraine's nuclear behaviour during these years.

Part I: Ukraine's cautious non-nuclear stance.

Ukraine's official position on the nuclear issue is often misunderstood and has been inaccurately portrayed in the literature. It is often assumed that, before independence, Ukraine pledged the unconditional surrender of all the nuclear weapons based on Ukrainian soil. Then, once independence from the Soviet Union had been safely assured, Kiev broke this promise and decided to keep the nuclear weapons after all. This was not the case. From the start, Kiev's nuclear stance was more complex than this account would suggest. Early signals, before the Declaration of Independence in December 1991, indicated that Ukraine's commitment to non-nuclear status was cautious and certainly not unconditional, and might be qualified at a later date. Only for a short period immediately following independence did Ukraine promise the surrender of the nuclear

weapons on its territory within a time-bound framework. But this decision proved to be politically unpopular and was soon reversed. Overall, Ukraine's nuclear policy was much more consistent and predictable than is often acknowledged, as this review of its early nuclear policy demonstrates.

1. High expectations

Ukraine's early statements on the subject of nuclear disarmament were encouraging. In particular, Kiev's attempts to join the NPT in July 1968 and July 1990 gave the international community reason to hope that Kiev would adopt a principled stance on the nuclear issue. Despite widespread proliferation fears during the collapse of the Soviet Union, Ukraine's past record created high expectations - especially in the West - that Kiev's leaders would be committed to the unconditional surrender of the nuclear weapons on its territory.

Ukraine's first attempt to join the NPT occurred shortly before it was open for signature on 1 July 1968. This was not an unusual request, since Ukraine was a member of the UN and was already party to the 1963 Partial Test Ban Treaty and other international accords. Before the treaty was concluded, Foreign Minister D. Belockolos made his support for the draft well known, describing it as a 'bridge which will lead peace-loving states, with the assistance of all the peoples of the world, to adopt another measure aimed at disarmament and the relaxation of international tension.' On 10 June 1968, he added his signature to the 91 other signatures recommending the ratification of the treaty.³ However, Moscow was not prepared to see Ukraine join the NPT as either a NWS or NNWS, and refused the request.⁴ Twenty years later, Ukraine's second attempt to join the NPT also failed due to Soviet opposition, but international expectations remained high, as the action over the NPT coincided with the

³ Savita Pande, 'Ukraine's "Non-nuclear" Option and the NPT,' *Strategic Analysis* 17 1994, p. 235.

⁴ There are various reasons why Ukraine was originally kept out of the NPT. The main reasons include the fact that Ukraine lacked a Ministry of Defence, and the fact that the competence of government of legislature was generally poor. It was also in the interests of the nuclear weapon states to keep Ukraine out of the NPT, as they did not want to increase the membership of the nuclear club. See Victor Batiouk, *Ukraine's Non-nuclear Option*. UNIDIR Research Paper No. 14 (New York: UNIDIR, 1992), pp. 2-4.

Declaration of State Sovereignty on 16 July 1990, which seemed to promise a radical non-nuclear policy.

Article IX of this document stated that 'the Ukrainian SSR solemnly proclaims its intention to become in future a permanent neutral state, taking no part in military blocs and holding to three non-nuclear principles: i.e. not to accept, produce or acquire nuclear weapons.'⁵ This was followed by a number of official statements that appeared to reinforce Ukraine's moral stance on the nuclear issue. For example, shortly after Ukraine declared its independence on 24 August 1991, Leonid Kravchuk, speaking at the General Assembly, promised that 'Ukraine does not seek to possess nuclear weapons' and 'intends to become a party to the NPT as a non-nuclear state.'⁶ A month later he confirmed this commitment, stating that 'our position is that Ukraine should have the status of a non-nuclear state.'⁷ He added that Ukraine would abide by all the nuclear treaties signed by the Soviet Union and foreign countries, and favoured central control over the nuclear weapons inherited by the Soviet republics.⁸ A week later, the Ukrainian defence minister, General Konstantin Morozov, announced that 'the Ukrainian armed forces will never have nuclear weapons.'⁹ He also informed the Soviet newspaper, *Narodnaya Armia*, that the weapons deployed on Ukrainian territory were already being set apart.¹⁰ When, on 24 October 1991, the Rada adopted a statement that promised to abide by START, and stated its intentions to accede to the NPT, Ukraine's non-nuclear future seemed to be secure.¹¹

2. Underlying caution

This non-nuclear policy was driven by three considerations. First, the need to impress the West and thus acquire international recognition at a time when

⁵ Quoted in John Dunn, 'The Ukrainian Nuclear Weapons Debate,' *Jane's Intelligence Review* 5 (August) 1993, p. 339.

⁶ Quoted in Pande, p. 235.

⁷ 'Ukraine Favors Central Control of Nuclear Weapons,' *FBIS-SOV-91-188*, 27 September 1991.

⁸ *Ibid.*

⁹ 'Defense Minister on Army, Nuclear Weapons,' *FBIS-SOV-91-193*, 4 October 1991.

¹⁰ *Ibid.*

¹¹ Pande, p. 236.

independence had not been formalised. Second, the opportunity to differentiate the aspiring new state from the central authorities in Moscow. Third, the genuine desire to prevent another nuclear catastrophe in Ukraine, following the world's worst nuclear disaster at Chernobyl only five years earlier.¹² But despite the anti-nuclear feelings amongst the public and the political leadership, no pledge was made to immediately divest the republic of all nuclear weapons. An undercurrent of caution ran through all Ukraine's non-nuclear statements. The question of ownership of the nuclear weapons on Ukrainian territory, and the issue of how, when and where the nuclear weapons would be destroyed, were contentious subjects from the beginning. It is possible that even at this early stage, the Ukrainian leadership recognised that the nuclear weapons in Ukraine could be used as an insurance policy to protect the new state from political and economic blackmail.

Ukraine's unwillingness to simply shed its inherited nuclear arsenal can be seen in its published statements and declarations. The July 1990 'Declaration of State Sovereignty' set out 'the intention to become in future' a non-nuclear state.¹³ In doing so, it carefully avoided committing Ukraine to even a vague timetable for disarmament, and indicated that Ukraine's non-nuclear status might be qualified at some point. The potential implications of this qualification appear to have either been overlooked or downplayed by the international community at the time. However, on 24 October 1991, Ukraine reiterated its position, and this time Russia was quick to raise international alarm over Ukraine's nuclear intentions. In the October 'Declaration on the Non-Nuclear Status of Ukraine,' the republic announced that it would carry out a policy aimed at the destruction of nuclear weapons 'in the minimum amount of time possible.' Thus, it became more apparent that Ukraine intended to set its own agenda. Kiev's position on the subject of ownership and control of the inherited nuclear weapons appeared to confirm Moscow's suspicions. On 27

¹² James Gow, 'Ukraine, the NPT and a Model Security Policy: to Have and Have Not?' in J. B Poole and R. Guthrie (eds.), *Verification 1995: Arms Control, Peacekeeping and the Environment* (Boulder: Westview Press, 1995), p.123.

¹³ Dunn (1993), p. 339.

September 1991, after a meeting with U.S. President George Bush, Kravchuk stated that he would not allow the nuclear weapons to be removed from Ukraine.¹⁴ A month later, the Ukrainian foreign minister, D. V. Pavlichko, reinforced this position, declaring that 'we, a state on whose territory nuclear weapons are located, bear responsibility for those weapons and, strictly speaking, for ensuring that they are never used until they are destroyed.'¹⁵ In response, the Russian press warned that Ukraine's non-nuclear policy was a farce - Ukraine intended to join the 'nuclear club.'¹⁶

3. The international backlash

Ukraine's cautious non-nuclear policy backfired, creating the incentives for a new approach. Kravchuk's announcement that he intended to keep the nuclear weapons in Ukraine provoked a bitter response from Russian President, Boris Yeltsin, who accused Ukraine of breaking its non-nuclear pledges.¹⁷ This was emphatically denied by the Ukrainian Foreign Ministry, which explained the Ukrainian desire to acquire non-nuclear status but to maintain control over the non-use of the nuclear weapons on Ukrainian soil.¹⁸ However, the damage had already been done. Rumours that the Russian government had discussed the possibility of exchanging nuclear strikes with Ukraine began to circulate as a result of an article published in the Russian newspaper, *Moskovskiye Novosti*, on 22 October 1991.¹⁹ These rumours were rejected by Moscow and Kiev, but they exacerbated Ukrainian insecurities. Despite Kravchuk's efforts to ease the tension and smooth relations between the two sides, the Foreign Ministry in Kiev believed that the Russian government was leading a campaign of misinformation. It was thought that Moscow was deliberately using the nuclear issue to discredit Ukraine in the eyes of the international community, thereby

¹⁴ *FBIS-SOV-91-188*.

¹⁵ 'Official on Nuclear Control Policy,' *FBIS-SOV-91-208*, 28 October 1991.

¹⁶ *Ibid.*

¹⁷ 'Reportage on Republic Nuclear Weapons Issue,' *FBIS-SOV-91-208*, 28 October 1991.

¹⁸ *Ibid.*

¹⁹ 'Report of Russian-Ukraine Arms Threats Rejected,' *FBIS-SOV-91-206*, 24 October 1991.

undermining Ukraine's progress to full-fledged statehood.²⁰ If this was Moscow's goal, it succeeded. The West sympathised with Russian concerns and exerted pressure on Ukraine to relinquish control over the nuclear arsenal.

Part II: Unconditional surrender? December 1991-March 1992

The negative international publicity generated by Ukraine's qualified non-nuclear stance was extremely worrying for the Ukrainian leader. Just as the long-awaited day of independence approached, Ukraine was being treated like an unruly child by the West, whose support Kravchuk considered crucial for Ukraine's survival. Perhaps naively, Ukraine's decisionmakers had hoped that the West would welcome Ukraine with open arms. By the time the referendum on independence had been held on 1 December 1991, Ukraine had been left in no doubt that the United States and the members of the EU were far more concerned about the future stability of Russia and the new republics than inviting newcomers into the old Western bloc. Their support would be conditional upon Ukraine's cooperation over the nuclear issue and its commitment to regional stability.²¹ This helps explain Kravchuk's decision to bow to pressure from Russia and the United States following independence. Two steps were taken to assuage international fears and improve Ukraine's international standing. First, Ukraine agreed to the joint control of nuclear weapons inherited from the Soviet Union under the auspices of the Commonwealth of Independent States (CIS). Second, Ukraine agreed to transfer the disputed nuclear weapons to Russia for dismantlement before an agreed deadline.

²⁰ 'Report Called Misinformation,' *FBIS-SOV-91-208*, 28 October 1991.

²¹ In particular, the United States and Britain made it clear that they regarded the Russian Federation as the rightful inheritor of the Soviet Union, and the rightful owner of the nuclear weapons on Ukrainian territory. Although this position was understandable given the proliferation concerns of the West, the United States and Britain showed minimal sensitivity to the aspirations of the newly independent states, and their Russo-centric policies served to inflame domestic political opposition to Kravchuk's cooperative approach over the nuclear issue between December 1991 and March 1992. 'The Security and Foreign Policies of An Independent Ukraine,' *Ukrainian Reporter* 2 (April) 1992, pp. 5-6.

1. Joint nuclear control and dismantlement under the CIS

On 8 December 1991, the heads of state of Belarus, Russia, and Ukraine established the CIS to replace the Soviet Union.²² Article VI of the agreement specified that 'members of the Commonwealth will preserve and support common military and strategic space under a common command, including common control over nuclear armaments, which will be regulated by special agreement.'²³ The Alma Ata Declaration confirmed Ukraine's official position on 21 December 1991. Under this agreement, the members of the CIS proposed the establishment of a joint strategic deterrence forces Command Headquarters as part of the United Arms Forces of the CIS - this included unified control over nuclear weapons.²⁴ Article V of the agreement specified that: 'the Republics of Byelorussia and Ukraine undertake to join the 1968 Nuclear Non-proliferation Treaty as non-nuclear states.'

More radical, as far as anything that Ukraine had previously promised was concerned, was Ukraine's pledge to transfer the inherited weapons to Russia for dismantlement within a given time-frame.²⁵ Article V of the Alma Ata Declaration stated that nothing in the agreement 'would stand in the way of transferring nuclear weapons from Byelorussia, Kazakhstan and Ukraine to the territory of the Russian Federation with a view to destroying them.'²⁶ Moreover, under article VI, the new republics pledged 'to ensure the withdrawal of tactical nuclear weapons to central factory premises for dismantling under joint supervision' by 1 July 1992.²⁷ At the Summit in Minsk on 30 December 1991, the parties to the CIS set the date for the removal of strategic nuclear weapons from Ukraine. By the end of 1994 all nuclear weapons, tactical and strategic, were to have been removed from Ukrainian soil.²⁸

²² Pande, p. 236.

²³ Potter (1995), p. 11.

²⁴ Pande, p. 236.

²⁵ Kravchuk discussed these issues and agreed to the radical proposals during meetings with U.S. Secretary of State, James Baker, the previous week, but the agreements were formalised at Alma Ata and Minsk. 'Ukraine, Belarus Discuss Armed Forces Control,' *FBIS-SOV-91-242*, 17 December 1991.

²⁶ *UNIDIR Newsletter* 22 and 23 (June/September) 1993, pp. 41-42.

²⁷ *Ibid.*

²⁸ Potter (1995), p. 1.

Kravchuk continued this policy of cooperation with Russia and the United States during the early months of 1992, despite growing unease in the Rada. In January, he told a delegation of the U.S. Armed Forces Committee that, although START I planned the elimination of 130 out of the 176 missiles based in the Ukraine over a period of seven years, Ukraine promised to remove all 176 in just three years. In February, Kravchuk took the initiative to propose a new round of negotiations between the United States and Russia to convert START I to a multi-party treaty, and declared that Ukraine was ready to reach agreements over strategic missiles not covered by START I, as well as strategic air force units deployed in Ukraine.²⁹ The Ukrainian leader was able to point out that Ukraine was keeping its promises and could be trusted - half of the tactical nuclear weapons had already been removed from Ukrainian territory and the deadline of 1 July 1992 would be met.³⁰

2. Opposition in the Rada

These meetings and agreements occurred on the back of a wave of euphoria in Ukraine. Public attention focused on Ukraine's newly acquired independence and the final dissolution of the Soviet Union, to the extent that the future of Ukraine's nuclear arsenal was not an issue *outside* the Rada. However, it has been suggested that, had there been a public debate about the fate of Ukraine's nuclear weapons at that time, popular support for Kravchuk's non-nuclear stance would have been strong, due to anti-nuclear feelings caused by the Chernobyl nuclear disaster.³¹ *Inside* the Rada, however, Ukraine's nuclear policy was a controversial subject. As early as September 1991, concern over the implications of Ukraine's non-nuclear stance had been voiced by the nationalists, who wanted Ukraine to maintain the nuclear forces.³² In particular, Yeltsin's announcement in a joint U.S.-Soviet television programme, that all nuclear weapons in Ukraine

²⁹ *PPNN Newsletter* 16 (Winter) 1991/92, p. 15.

³⁰ 'Kravchuk Says Half of Nuclear Weapons Removed,' *FBIS-SOV-92-026*, 7 February, 1992.

³¹ Gow, p. 123.

³² Bohdan Nahaylo, 'The Shaping of Ukrainian Attitudes Towards Nuclear Arms,' *RFE/RL Research Reports* 2 (19 February) 1993, pp. 24-25; Viacheslav Pikovshek and Serhei Skrypnik, 'A Ukrainian Army - Utopia or Reality?' *Ukrainian Reporter* 1 (October) 1991, p. 2.

and Kazakhstan would be transferred to Russian territory, caused dismay in the Rada. But despite strong feelings amongst some individuals in parliament, that Ukraine should not be put under Russian and American pressure to hand over its nuclear weapons, Kravchuk pushed ahead with the agreements at Alma Ata and Minsk, without debating the matter in Kiev.³³

3. The honeymoon is over, January 1992

Kravchuk's statesmanlike approach to the nuclear issue brought Ukraine few benefits beyond the formal recognition of its independence by Russia and the West. By late January 1992 even this was in danger of being undermined, as Russia and Ukraine disputed the ownership of the Black Sea Fleet, and Moscow laid claim to the Crimea. As the euphoria following independence began to wane, it was replaced by a greater awareness of the difficulties involved in state-building and the particular threats and vulnerabilities faced by an independent Ukraine.

The future looked bleak. Although a large portion of the Soviet military remained on Ukrainian territory after independence, Ukraine did not possess forces that it could claim as its own and, in addition, lacked a military doctrine.³⁴ The parallels between Ukraine's situation in January 1992, and its attempt to form an independent state during the Bolshevik Revolution were not lost on decisionmakers in Kiev. The defeat of the 1917-1920 independent Ukrainian state is commonly laid at the door of the Socialist government, which proclaimed a new era of the 'friendship of nations' that did not require countries to possess armed forces. Due to the leadership's pacifistic beliefs, the Ukrainian People's Republic disbanded an army of almost one million. As a result, Ukraine was easily defeated by the Bolsheviks.³⁵ Given the lack of an organised military,

³³ Ibid., p. 31.

³⁴ Steven J. Zaloga gives details of the Soviet nuclear and conventional forces inherited by Ukraine in December 1991. Zaloga, 'Armed Forces in Ukraine,' *Jane's Intelligence Review* (March) 1992, pp. 131-136.

³⁵ It is significant that there were many references to this failed attempt at independence both in parliament and in the press and academic literature in early 1992. Parallels were being drawn between the two attempts at independence. 'The Security and Foreign Policies of an Independent Ukraine,' p. 7; Volodymyr Ruban, 'Ukraine's Nuclear Doubts,' *Ukrainian Reporter* 2 (January) 1992, p. 3; Pikovshek and Skrypnyk, p. 9.

the history and deterioration of relations with Russia, and the absence of allies, it is not surprising that Ukraine feared that this experience might be repeated.³⁶

4. The dispute over the Black Sea Fleet

The Black Sea Fleet, one of four fleets in the former Soviet navy, had bases in Ukraine (Sevastopol, Odesa and Balaklava), Georgia (Poti), and Russia (Tuapse).³⁷ At the time of the break-up of the Soviet Union, it reportedly comprised of between 300 and 440 ships, including 40 major surface ships, 18 submarines, and 250 smaller vessels.³⁸ In addition, it was believed to include approximately 300 naval aircraft and helicopters and 70,000 personnel and, significantly, the majority of the tactical nuclear weapons inherited by Ukraine.³⁹ Sevastopol was of particular significance because it incorporated 82 per cent of the fleet's infrastructure - which was worth more than the fleet itself.⁴⁰ Most of the ships based in Sevastopol were poorly maintained, but from Ukraine's perspective, the existing navy and its infrastructure provided the easiest method of building up a navy to protect the country's 600-mile coastline.⁴¹ Moreover, because it was based in Crimea, ownership of the fleet was tied to the issue of Ukrainian sovereignty and territorial integrity.

³⁶ The historical roots of Ukraine's Russo-phobia run deep. Ukraine's first experience of Russian imperialism dates back to the seventeenth century, when the embryonic Ukraine, the Cossack kingdom of Kievan-Rus, was overwhelmed by the Poles. In his attempt to throw off the Polish invaders, the Cossack leader, Bohdan Khmelnytsky, signed a treaty with Russia in 1654. Over the next 150 years, Russia took advantage of its new links with the Cossacks to establish complete control of most of Kievan-Rus. The social effects were disastrous. Following the imposition of serfdom on the land during the eighteenth and nineteenth centuries, education declined. The few schools that had been set up were closed, and the publication of materials written in Ukrainian was banned. At the end of the nineteenth century, 80 per cent of Ukrainians were illiterate.

In 1917, Ukraine declared independence from Russia, but was seized by the Bolsheviks. Subsequent attempts to regain independence were thwarted by Stalin, who launched a terror famine against Ukraine in an effort to stamp out separatism. By the early 1930s, one quarter of the rural population had died or were dying as a result of a famine which killed more people than the First World War. During the Second World War, Ukraine experienced anti-Slav hatred of the Nazi occupation followed by another period of repression under the Red Army. But Ukrainian nationalism survived this onslaught.

Given the history of relations between the two states, it is not surprising that Ukraine feared Russian imperialism, especially in the period following independence. Official paranoia about Russian motives feeds on the conviction that Russia will never come to terms with an independent Ukraine. Cowley, pp. 12-14.

³⁷ 'Dispute Between Russia and Ukraine Over the Black Sea Fleet,' *Ukrainian Reporter* 2 (January) 1992, p. 8.

³⁸ Ustina Markus, 'The Ukrainian Navy and the Black Sea Fleet,' *RFE/RL Research Reports* 3 (6 May) 1994, p. 33.

³⁹ *Ibid.*

⁴⁰ *Ibid.*, p. 34.

⁴¹ The ships were rusty there were some doubts over whether they were even seaworthy. An article in the *Financial Times* described the fleet as a 'complete farce,' *Financial Times*, 11 October 1993.

The dispute over ownership of the Black Sea Fleet arose in October 1991, but became heated in early January 1992, just weeks after Kravchuk issued the 'Decree on the Ukrainian Armed Forces,' which outlined Ukraine's plans to develop land, sea and air power.⁴² Despite the failure of the CIS to reach a decision over how the fleet should be divided, the document stated that the Ukrainian navy was to be built up from its share of the Black Sea Fleet.⁴³ This was followed by Ukraine's introduction of a new law to ensure that the naval personnel would be loyal to Ukraine - former Soviet servicemen based in Ukraine were instructed to either swear an oath of allegiance to the new republic or return to their own countries. In retaliation, on 6 January 1992, Marshal Shaposhnikov, the Russian commander of the Black Sea Fleet, sent a new oath to all units of the FSU armed forces that would give them exclusive allegiance to Russia. This was later withdrawn, but Yeltsin's assertion that the Black Sea Fleet 'was, is, and always will be Russian' exacerbated tension between the two countries. Moreover, claims in the Russian press that Ukraine 'never had a navy,' 'couldn't run a navy' and 'has no need of one,' only served to increase anti-Russian feeling in Kiev.⁴⁴

5. The Crimea question

The future of the Black Sea Fleet was closely linked to the future of Crimea, which became a hotly disputed subject in January 1992. In the December referendum, Crimea had voted 54 per cent in favour of Ukrainian independence which, as far as the Ukrainian leadership was concerned, fully justified its incorporation into the new republic. This view was not shared by Russia, which pointed out that the Crimea was the only region of Ukraine with a Russian majority. Moreover, it was transferred to the Ukrainian republic by Nikita

⁴² Morozov claimed that Ukraine was entitled to the entire fleet in October 1991. The Russian Commander of the fleet rejected these claims and asserted that it must remain part of the united Soviet strategic force. In November, Kravchuk responded by nationalising the shipyards at Mykolaiv, where the carriers for the Black Sea Fleet are built. In December, Moscow received a further blow to Soviet control when the Navy Commander-in-Chief of the USSR, Vladimir Chernavin, voiced his readiness to turn the fleet over to Ukraine. 'Dispute Between Russia and Ukraine Over the Black Sea Fleet,' pp. 8-9.

⁴³ Markus, p. 32. The CIS naval and military high command initially agreed to Ukraine having only a small number of boats for coastal defence because it wanted to prevent the disintegration of the former Soviet armed forces.

⁴⁴ 'Dispute Between Russia and Ukraine over the Black Sea Fleet,' p. 10.

Khrushchev as recently as 1954.⁴⁵ The future of the peninsula was also questioned by the Republican Movement of Crimea, which, on 17 January 1992, collected 300,000 signatures in support of the transfer of Crimea back to Russia.⁴⁶ This provided Moscow with an opportunity to claim the peninsula, which was of historic and strategic significance to Russia. On 23 January 1991, the Russian parliament referred the question of the 1954 transfer to committees for consideration.⁴⁷

6. Mood change in Kiev

The disputes over the Crimea and the Black Sea Fleet were a major blow to Ukraine, which interpreted Russia's behaviour as a threat to Ukraine's sovereignty and territorial integrity.⁴⁸ The result was a distinct mood change in Kiev. The fragile relationship between the two states, which Kravchuk had been nurturing in the weeks after independence, began to disintegrate. The Ukrainian president tried to prevent further damage to bilateral relations, and continued his policy of cooperation in the hope that the situation could be resolved.⁴⁹ However, for a growing number of parliamentarians, the Alma Ata and Minsk agreements began to take on new meaning. The CIS was seen as a cover for Russian neo-imperialism, and by late January, Russian intentions in all its dealings with Ukraine were considered to be highly suspect.⁵⁰

Part III: Qualified non-nuclear stance, March to October 1992

Between March and October 1992, Kravchuk qualified Ukraine's non-nuclear stance. Ukraine would continue to strive for nuclear-free status, but on its own terms and only if Ukraine's national interests could be served. As far as the continued transfer of tactical nuclear weapons was concerned, Kiev insisted on

⁴⁵ Ruban, p. 3.

⁴⁶ *Radio Kiev*, quoted in 'Dispute Between Russia and Ukraine over the Black Sea Fleet,' p. 10.

⁴⁷ *Ibid.*

⁴⁸ Gow, pp. 262-263, and Olga Alexandrova, 'Russia as a Factor in Ukrainian Security Concepts,' *Aussenpolitik* 1 1994, p.72.

⁴⁹ *PPNN Newsletter* 16 (Winter) 1991/92, p. 15.

⁵⁰ 'The CIS - A New Russian Empire?' *Ukrainian Reporter* 2 (January) 1992, p. 10.

greater control over the removal process. In addition, Ukraine required two concessions in return for strategic nuclear disarmament: first, security guarantees to protect Ukraine from nuclear-armed aggressors (Russia in particular); second, financial assistance to cover the costs of the dismantlement process and to shore-up Ukraine's failing economy. If these conditions were met, Ukraine would be willing to eliminate its strategic arsenal, providing the dismantlement process could take place on its own territory.

In assuming this hardened position, the Ukrainian president hoped that he would be able to use the nuclear issue to achieve two objectives. His primary goal was to draw the United States and the other NATO members into negotiations in the hope that this would reduce Russia's control over Ukraine's strategic environment. On the domestic front, he hoped that this would placate the increasingly vocal opposition to what was being referred to in parliament as his surrender to the enemy. Although Kravchuk succeeded, to a certain degree, with his first objective, he failed in the second. This failure was exacerbated by a further deterioration in relations with Russia, and a deepening economic crisis.

1. Suspension of the transfer

On 12 March 1992, Kravchuk announced Ukraine's decision to stop transferring tactical nuclear weapons to Russia, claiming that it could not exercise any control over the dismantling process there.⁵¹ At a press conference on 12 March, Kravchuk claimed that 'we cannot be sure that the missiles being sent away by us are not falling into unfriendly hands.'⁵² This was based on reports that the missiles being transferred to Russia were not being destroyed, and rumours that Russia intended to use them to replace obsolete Russian missiles.⁵³ This was unacceptable to Ukraine, as the agreements made at Alma Ata and Minsk had stipulated that the members of the CIS should jointly supervise the destruction of the weapons.

⁵¹ Pande, p.237.

⁵² 'Kravchuk Suspends Removal of Nuclear Weapons,' *FBIS-SOV-92-050*, 13 March 1992.

⁵³ Ruban, p. 2.

Although the lack of supervision was the only reason given for the suspension, Ukraine's action was also motivated by other factors. Firstly, it appears to have been a response to fears, expressed in the Rada, that Ukraine had relinquished too much control over its affairs to Russia, particularly in the light of Moscow's aggressive approach over the Black Sea Fleet and Crimea. Aware of this growing domestic political pressure, Kravchuk wanted to re-establish some control over Ukraine's nuclear policy. To this end, Kravchuk announced at the press conference that Ukraine had decided to build a works for the destruction of weapons on its own territory.⁵⁴ Hoping that he could enlist Western support for this venture, he also proposed that the United States and the EU help finance the building of the Ukrainian facility.⁵⁵ Secondly, there was growing concern in Ukraine over energy supplies. On 1 February 1992, Russia had announced its intention to raise the price of oil and gas, and had indicated its unwillingness or inability to supply Ukraine with the 40 million tons of crude oil that had originally been promised.⁵⁶ In response, Ukraine sought alternative supplies from Iran and Turkmenia, but these did not make up for the shortfall.⁵⁷ It is possible that, in an attempt to avert an energy crisis, Kravchuk had hoped that the nuclear issue could be used as leverage to secure cheap Russian supplies.

2. The hostile U.S. reaction

Initially, Ukraine's action did not have the desired effect - the international response was hostile. The suspension caused a sensation in the world press and the renewal of international speculation over Ukraine's nuclear intentions. U.S. Secretary of State, James Baker, warned that if Ukraine did not remove all tactical nuclear weapons from its territory, U.S. aid to the republic would be cut. Kravchuk had not anticipated this response. As a result of the threats, just six days after the announcement of the suspension, Kravchuk informed Yeltsin that the remainder of the tactical nuclear weapons would be transferred to Russia by

⁵⁴ FBIS-SOV-92-050.

⁵⁵ Nahaylo, p. 31.

⁵⁶ 'Ukraine Secures Alternative Oil and Gas Supplies,' *Ukrainian Reporter* 2 (March) 1992, p. 2.

⁵⁷ *Ibid.*, p. 3.

1 July 1992.⁵⁸ However, this was carried out amid increasing bitterness amongst Ukrainian parliamentarians, who resented Washington's lack of even-handedness in its approach to Moscow and Kiev, at a time when Ukraine needed support and reassurance.⁵⁹ The statement from the North Atlantic Treaty Organisation (NATO), received on 9 April 1992, reinforced this sentiment, as it warned of 'serious allied concerns about the continuing suspension of transfers of nuclear weapons from Ukraine to Russia,' and failed to acknowledge Ukraine's insecurities.⁶⁰

3. The debate in the Rada

When the issue was debated in the Rada on 8 April 1992, the opposition to unilateral disarmament was evident. Participants in the debate argued that it was folly to hand over nuclear weapons to a state that posed a threat to Ukraine and, moreover, to do this without extracting any form of concessions. There was general agreement that, if Ukraine relinquished its remaining nuclear weapons, its bargaining position would be weakened and the chances of drawing the United States into negotiations would be lost. On the other hand, if Ukraine retained the nuclear weapons for an interim period, they could be used as a bargaining chip to obtain security guarantees from the United States in return for unilateral disarmament.⁶¹ Moreover, Western aid to fund the huge costs involved in decommissioning Ukraine's strategic missiles - which were estimated to begin at \$2 billion - might also be obtained.⁶² Most deputies took this line of argument, rather than debating the strategic benefits that nuclear weapons might provide. However, one particularly vociferous critic of Kravchuk's nuclear policy, a member of the Parliamentary Commission on Defence and State Security, General Volodymyr Tolubko, stressed that a non-nuclear state could not be expected to be taken seriously by the international community. His proposal - the

⁵⁸ 'Ukraine to Withdraw all Nuclear Weapons by 1 July,' *FBIS-SOV-92-055*, 20 March 1992.

⁵⁹ Nahaylo, p. 33.

⁶⁰ *Reuters*, 9 April 1992.

⁶¹ Gow, p. 122.

⁶² *Ibid.*; Nahaylo, p. 32.

creation of a Ukrainian 'nuclear defence shield' - was reportedly greeted with applause.⁶³

The debate resulted in the adoption of a parliamentary resolution entitled 'Additional Measures for Ensuring Ukraine's Acquisition of Non-nuclear Status.' This document declared it as 'non-expedient to withdraw tactical nuclear weapons from Ukraine until the introduction of international control over their annihilation with Ukrainian participation.'⁶⁴ Point V of the resolution instructed the appropriate parliamentary commissions to review Ukraine's nuclear policy from the point of view of guaranteeing the security and external political interests of Ukraine. Perhaps most significantly, Point VI called on the government to submit for ratification the agreements made at Alma Ata and Minsk in December 1991. The majority of deputies in the Rada believed that Kravchuk had taken too many unilateral decisions in the first months of independence, and they were determined to try and put a stop to this.

4. The Lisbon Protocol

The Rada's resolution provoked a flurry of bilateral negotiations between the United States and Ukraine and between Moscow and Kiev. Kravchuk was anxious to prevent the Rada's pro-nuclear sentiment from giving Ukraine pariah status in the international community. While Kravchuk received the U.S. Under Secretary of Defense, Paul Wolfowitz, in Kiev; Morozov met with Baker and U.S. Defense Secretary, Richard Cheney, in Washington; and Ukrainian Foreign Minister, Anatoly Zlenko met Yeltsin in Moscow. As a result of these meetings, Kravchuk and Yeltsin signed an agreement on 16 April 1992, whereby the shipments of tactical nuclear weapons to Russia would be resumed under Ukrainian supervision.⁶⁵ This agreement resolved the immediate problem of the transfers, but the disputes over the Black Sea Fleet and Crimea, and concerns over the potential energy crisis, remained. However, the news of the agreement

⁶³ Nahaylo, p. 32.

⁶⁴ Ruban, p. 3.

⁶⁵ James Meek, 'Nuclear Weapons Transferred from Ukraine to Resume,' *The Guardian*, 15 April 1992.

was welcomed in Washington, and Kravchuk was hopeful that he would be able to capitalise on the upturn in relations. Before his official visit to the United States in early May 1992, Kravchuk praised the 'more constructive line' that Washington was taking towards Ukraine.⁶⁶ At the same press conference, he stressed that 'Ukraine aspires to become a nuclear-free state' but was faced with neighbours 'who have started making territorial claims on Ukraine.'⁶⁷ This was an unsubtle reference to the dispute over the Crimea. He added that 'we will put this question to the world community in order to have guarantees of security.'⁶⁸

During his negotiations with President Bush, Kravchuk failed to obtain security assurances. He was, nevertheless, promised \$400 million of U.S. aid to assist in disarmament, and agreed to sign the Lisbon Protocol to the START I treaty on 23 May 1992.⁶⁹ This appears surprising at first, but when the terms of the Protocol are considered, Kravchuk's position can be understood: the agreement was set to allow Ukraine seven years longer to eliminate strategic forces on its territory than the commitment made at Minsk.⁷⁰ Moreover, two letters, qualifying Ukraine's position, were attached to the agreement - one emphasising Ukraine's right to 'control over the non-use of the nuclear weapons on its territory,' the other insisting on negotiating security guarantees in return for nuclear disarmament.⁷¹ Kravchuk maintained this position during July and August, stressing Ukraine's desire to become nuclear-free but, at the same time, reiterating Kiev's concern that its strategic nuclear weapons should not be

⁶⁶ 'Kravchuk Discusses Nuclear Weapons, Security,' *FBIS-SOV-92-083*, 29 April 1992.

⁶⁷ *Ibid.*

⁶⁸ *Ibid.*

⁶⁹ Under this agreement, Ukraine agreed to comply 'in the shortest possible time' as 'a non-nuclear state' to the nonproliferation treaty. Each of the nuclear inheritors also undertook to ratify the treaty and the protocol 'in accordance with their constitutional practices.' However, the atmosphere at the signing ceremony was strained. Russia insisted that the START I treaty should not be implemented until Ukraine had eliminated all the nuclear weapons on its territory - as far as Yeltsin was concerned, Kiev was still bound by the timetable set out in the 1991 Alma Ata and Minsk agreements, rather than the seven-year period specified in the START I treaty. Kravchuk would not agree to this, and qualified Ukraine's position in a letter to Bush and a note issued to the ambassadors of NATO countries. In the letter, Kravchuk emphasised Ukraine's right to control 'the non-use of nuclear weapons' deployed on its territory and to eliminate the strategic arsenal over a period of seven years. In the note to the ambassadors of the NATO countries, Ukraine informed the international community that, in return for disarmament, Ukraine would insist on 'guarantees to its national security,' including guarantees against the possible 'use of force against Ukraine on the part of any nuclear state.' Both of these letters were attached to the Lisbon Protocol. Norman Kempster, 'Pact Leaves Only Russia with Nuclear Arms in Commonwealth,' *Los Angeles Times*, 24 May 1992; Don Oberdorfer, 'Three Ex-Soviet States Give Up A-Arms,' *Washington Post*, 24 May 1992; Texts of the Lisbon Protocol and accompanying letters, *Arms Control Today* (June) 1992, pp. 34-36.

⁷⁰ Nahaylo, p. 36.

⁷¹ *Arms Control Today* (June) 1992, pp. 34-36.

transferred to Russia, but should be 'dismantled on the spot.'⁷² His comments were greeted with accusations in the international press - and from Moscow - that he was undermining the Lisbon Protocol. He was, however, simply re-stating the conditions that Ukraine had set out before signing the document in May.

5. Ukraine's economic crisis, summer 1992.

Kravchuk's conditional non-nuclear policy could be seen as a qualified success from a diplomatic perspective. Negotiations between Washington and Kiev were reasonably constructive (although there was little in the way of concrete concessions) and Ukraine had asserted a degree of control over the nuclear issue. Despite this, Ukraine's insecurities actually increased between May and October 1992. The reasons for this lay mainly at the domestic level, although the unresolved disputes with Russia over the ownership of the Black Sea Fleet and Crimea also played a role.⁷³ Ukraine's economy was causing the most serious concern. Ukraine experienced a sharp decline in industrial and agricultural output in the first half of 1992, due to the acute shortage of energy and raw materials, which were traditionally imported from Russia and other former Soviet Republics.⁷⁴ This was accompanied by accelerating inflation - which in autumn 1992 was predicted to reach 2000 per cent for the year - and a rapidly depreciating currency, the karbovanets.⁷⁵ By October 1992, economic collapse loomed. Ukraine's survival as an independent state appeared to be under threat,

⁷² Teresa Hitchens and George Leopold, 'Kravchuk Waffles on Nuclear Issue,' *Defense News* (13-19 July) 1992, pp. 27-28; 'Kravchuk Speaks in Brussels on Nuclear Weapons,' *FBIS-SOV-92-136*, 15 July 1992; 'Kravchuk Comments on Economy, Nuclear Weapons,' *FBIS-SOV-92-163*, 21 August 1992.

⁷³ Crimea declared its independence from Ukraine on 5 May 1992, subject to a referendum in early August. The Ukrainian parliament maintained this was unconstitutional, and set a deadline of 20 May for the decision to be annulled. Subsequent negotiations led to a power-sharing scheme, which resolved the problem in the short-term.

Russia's reaction to the Crimean declaration of independence was the most worrying aspect of the crisis from Ukraine's point of view. Russian lawmakers voted to declare null and void the peninsula's transfer to Ukraine in 1954 and insisted that the Crimean question be resolved with Moscow's participation in the negotiating process. This was rejected by Kiev, having reinforced fears that Russia had designs on Ukrainian territory. The dispute over the Black Sea Fleet was contributing to Ukraine's insecurity. During spring/summer 1992, Russia and Ukraine had agreed to the joint of the fleet until the question of ownership could be settled. However, the various agreements made between the two sides were constantly being broken, leading to constant accusations and recriminations. Roman Solchanyk, 'Crimea's Presidential Election,' *RFE/RL Research Report* 3 (March) 1994, pp. 2-3; Markus, p. 34.

⁷⁴ Economist Intelligence Unit, *Country Report: Ukraine*. Second Quarter. (London: EIU, 1993), pp. 20-23.

⁷⁵ *Ibid.*

and the administration, headed by Prime Minister Vitold Fokin, was unable or unwilling to prevent the disintegration of the state.

Part IV: Nuclear posturing (phase 1), October 1992 to July 1993

The deepening economic crisis in Ukraine seriously undermined Kravchuk's position in the Rada. Frustration over Fokin's failure to introduce a package of economic reform was so pervasive that, despite Kravchuk's attempts to prevent it, parliament brought down the government by the end of September. On 27 October 1992, Leonid Kuchma was elected Prime Minister, significantly reducing Kravchuk's power in the Rada.⁷⁶ Whereas Fokin had been the president's ally; Kuchma was not. With Kravchuk's position weakened, power shifted in favour of parliament.⁷⁷ Together, the power shift, the economic crisis, and the perceived threat from Russia and separatist forces in Ukraine, had a major impact on nuclear policy. From October 1992 to December 1994, Ukraine engaged in a period of nuclear posturing, during which time Kiev declared ownership and operational control of the nuclear weapons on its territory, and demanded financial compensation and security guarantees in return for denuclearisation.

The first phase of nuclear posturing, from October 1992 to July 1993, differed from later phases in three ways. First, there was a high level of support in governmental and legislative bodies for Ukraine to temporarily declare itself a nuclear weapon state. References to Ukraine's non-nuclear status, which had dominated previous official statements on the nuclear issue, almost disappeared during this phase. Second, although Ukraine was prepared to negotiate with the international community over the disarmament issue, Kiev was not willing to compromise on its demands: compensation for the tactical nuclear weapons transferred to Russia; financial assistance for dismantlement; and legally binding security guarantees; would all have to be provided *before* parliament would ratify the START treaty and the NPT. Third, during this period, Ukraine was treated like a pariah by the Bush administration and the incoming

⁷⁶ Nahaylo, p. 38.

⁷⁷ Ibid.

Clinton administration. The United States used threats to try and force Ukraine to relinquish the strategic nuclear weapons and insisted that financial assistance and security assurances would not be forthcoming until *after* Ukraine had ratified both treaties. The result was a stalemate. Ukraine became increasingly isolated and there appeared to be no way of moving negotiations forward.

1. The pro-nuclear lobby

A number of publications by Kostenko, published in the parliamentary daily, *Holos Ukrainy*, were largely responsible for the increasingly pro-nuclear position of parliament. At the beginning of September, Kostenko had published a major two-part article arguing that Ukraine should declare nuclear status until the country's national security could be guaranteed.⁷⁸ He reasoned that, in the interests of security, the issue of nuclear disarmament and 'intensive political and economic integration with the Countries of Western Europe' should be interdependent - the last strategic missile located on Ukrainian territory should be destroyed when Ukraine's fate has been fused with that of many states of Europe.' According to Kostenko, the dismantlement or removal of the nuclear weapons on Ukrainian territory would be 'not only premature, but dangerous.' The weapons were needed as a temporary form of insurance until alternative sources of protection could be secured.

Tolubko also published a series of articles in October and November 1992.⁷⁹ He argued that Ukraine required the nuclear weapons, not just as a bargaining chip to extract concessions, but also as a strategic deterrent. He was convinced that Ukraine possessed the military-industrial complex to maintain the republic as a nuclear state, and asserted that it would be foolish to relinquish a capability that many states were striving for, and others were determined to hold on to. Faced with a northern neighbour which had not renounced its territorial claims on Ukraine, and which was 'a constant source of

⁷⁸ Yuri Kostenko, 'Ukraine's Nuclear Weapons: A Blessing or a Curse?' *Holos Ukrainy*, 29 August and 1 September 1992.

⁷⁹ Quoted in Nahaylo, p. 40.

instability and danger,' Ukraine could not afford to risk disarmament. As far as Tolubko was concerned, at that particular point in time, Ukraine had greater need of the inherited nuclear arsenal than any other state - its incorporation of these weapons into its military forces was totally justified. Moreover, he suggested that it would be prudent for Ukraine to modernise its nuclear force.⁸⁰

Tolubko's ideas appealed to parliament because many of the deputies shared his anti-Russian sentiment, but Kostenko's ideas were more influential for practical reasons. All Ukraine's tactical nuclear weapons had been transferred to Russia by July, leaving only the strategic arsenal. These weapons had an intercontinental range, making them all but irrelevant to Ukraine's current security concerns. Moreover, Kiev did not possess the ability to launch the weapons independently - any attempt to operate the weapons would require the cooperation of Ukraine's enemy, Russia.⁸¹ Contrary to Tolubko's optimistic statements, Ukraine was also dependent on Russia for parts, design, maintenance, testing and early warning.⁸² These serious flaws in Ukraine's nuclear capability had been well publicised following independence, and had been used to support Kravchuk's non-nuclear stance.⁸³

Kostenko's idea of using temporary nuclear status to blackmail the international community into making concessions was more realistic and gained widespread support in the Rada.⁸⁴ This support burgeoned when it was revealed that the United States had agreed to buy, from Russia, the enriched uranium that had been removed from the transferred nuclear warheads.⁸⁵ This reinforced Kostenko's argument that Ukraine had been cheated during its non-nuclear phase. Tactical nuclear weapons had been transferred from Ukraine to Russia, where the HEU was being sold to Washington and the proceeds kept by Moscow. To add insult to injury, Kiev was forced to buy enriched uranium for its

⁸⁰ Potter (1995), p. 21.

⁸¹ Dunn (1993), p. 339.

⁸² Ibid.

⁸³ For example, Professor Volodymir Vasylenko of Kiev University had persuaded the government that 'you cannot have a nuclear force that is not tied to the Russian force because of technology and control systems.' Ibid.

⁸⁴ Kostenko's influence was also enhanced after his appointment to the position of environment minister in the new government.

⁸⁵ *Reuters*, 22 September 1992.

nuclear reactors from Russia at a time of potential economic collapse. This caused outrage in the Rada. Parliament's rejection of the draft military doctrine on 28 October was symptomatic of this mood. The document stated that the Ukrainian Ministry of Defence 'considers that the declaration of Ukraine as a nuclear state has no realistic basis.'⁸⁶ The draft was strongly criticised by all parties and sent back for revision.⁸⁷ The idea of Ukraine's unilateral disarmament was no longer acceptable.

2. Ukraine's nuclear strategy and demands

Kuchma made it clear that the new government's actions would not be guided by altruistic idealism or by the West's wishes, but by grim economic and political realities. The strategic nuclear weapons inherited from the Soviet Union may not provide Ukraine with military power, but they did provide political leverage at a time when alternative sources of power were in decline. The government took two principal steps to initiate this strategy. The first was to establish control over the strategic nuclear arsenal on Ukrainian territory. Various steps were taken to display this intention to the international community. Ukraine announced the decision to implement administrative management of the nuclear forces and control over their non-use.⁸⁸ To achieve this, a Centre of Administrative Control of the Strategic Forces of the Ukrainian Ministry of Defence, was created. Kiev also sought to incorporate the strategic nuclear forces into the Ukrainian Armed Forces by requiring troops and officers to take the Ukrainian oath of allegiance - this was extended to the troops guarding nuclear warheads.⁸⁹ Finally, efforts began to develop Ukrainian launch-codes to circumvent the Russian blocking devices on the ICBMs.⁹⁰

The second step was to make it clear to the international community that Ukraine was open to negotiation; Kiev's position on the nuclear

⁸⁶ Nahaylo, p. 39

⁸⁷ Ibid.

⁸⁸ Potter (1995), p. 22.

⁸⁹ Ibid.

⁹⁰ Ibid.

issue had hardened, but this was not necessarily irreversible. Given suitable compensation, Ukraine would be willing to disarm. On 5 November, First Deputy Prime Minister, Ihor Yukhnovsky, speaking at a press conference, declared that the nuclear weapons on Ukrainian territory belonged to the Ukrainian people. If the West did not provide assistance, Ukraine could sell the warheads to other nuclear states 'which means first of all Russia and after ward those who will pay the most.'⁹¹ On 10 November, Kravchuk told another press conference that he was under pressure to produce a nuclear deal that would meet the economic and strategic concerns of parliament and the new government.⁹² He made it clear that the ratification of START I would be dependent on such a deal, which would have to include some material compensation and 'certain guarantees for its security.'⁹³ When neither of these concessions appeared to be forthcoming, Kravchuk announced in mid-December that Ukraine now had the technical means to block the firing of nuclear missiles from Ukrainian territory if the order had not been sanctioned by the Ukrainian leader.⁹⁴ Ukraine did not have the means to launch missiles independently, but this announcement may have been intended to raise concerns that this capability might follow.

3. International isolation

Ukraine pursued the same strategy and continued to make the same demands over the next six months, with little success.⁹⁵ Ukraine's nuclear posturing was greeted with bitter accusations in the Western press, as Kiev was blamed for

⁹¹ Robert Seely, 'Ukraine Threatens to Auction Nuclear Missile Materials.' *The Times*, 12 November 1992.

⁹² It has been argued that, in late 1992 and for most of 1993, the Rada essentially served as the 'bad cop,' increasing the executive branch's (the 'good cop') leverage in negotiations with Russia and the United States. However, this appears to be an example of post-hoc rationalisation. It is unlikely that this tacit cooperation existed between the executive and legislative branches. Evidence from the debates over the nuclear issue in the Rada show divisions within and between the different branches. Sherman W. Garnett, 'The Sources and Conduct of Ukrainian Nuclear Policy,' in George Quester (ed.), *The Nuclear Challenge in Russia and the New States of Eurasia* (Armonk, NY: M.E. Sharpe, 1995), p. 137.

⁹³ *Holos Ukrainy*, 13 November 1992.

⁹⁴ *Holos Ukrainy*, 16 December 1992.

⁹⁵ Ukraine's political leaders made their demands very clear in the ensuing months. Ukraine wanted compensation for the tactical nuclear weapons moved to Russia - this could take the form of uranium needed for the operation of Ukrainian nuclear power plants. Ukraine also wanted security guarantees and financial compensation in return for the ICBMs. A figure of \$1.5 billion was considered fair. The U.S. offer of \$175 million was rejected as totally insufficient. *FBIS-SOV-93-009*, 14 January 1993; *FBIS-SOV-93-017*, 28 January 1993; *FBIS-SOV-93-018*, 29 January 1993; *FBIS-SOV-93-022*, 4 February 1993; *FBIS-SOV-93-044*, 9 March 1993.

holding the START process hostage.⁹⁶ Negative attitudes had become even more pervasive after the announcement, in December 1992, that the United States and Russia had reached a sweeping new agreement to slash their nuclear arsenals by two-thirds and that President's Bush and Yeltsin would be signing a START II treaty at the beginning of the new year. The agreement was dependent on Ukraine's ratification of the START I treaty, which now seemed unlikely. Ukraine was increasingly seen as the international nuclear bogeyman.

Rather than attracting international help to resolve its internal and external security concerns, Ukraine became more isolated in the first half of 1993. Baker's replacement as U.S. Secretary of State, Lawrence Eagleburger, warned Ukraine that continued delay in ratifying the START I treaty would harm U.S.-Ukrainian relations. When Deputy Foreign Minister, Borys Tarasyuk, visited Washington in one of the many trips to secure financial assistance and security guarantees, he was informed that such assistance would be forthcoming only after Ukraine had ratified START I and the NPT.⁹⁷ Furthermore, the United States was not prepared to offer firm security guarantees - only the vague assurances that the United States gives to all signatories of the NPT.⁹⁸ The same message was given to Kravchuk by British Prime Minister, John Major, when the Ukrainian President visited London from 9 to 12 February 1993.⁹⁹ Ominously for Ukraine, this inflexible approach was not limited to the United States and Western Europe. Since independence, Kiev had also been seeking security guarantees and economic cooperation from Eastern Europe, and had been active in promoting Central and Eastern Europe (CEE) cooperation. In 1992 Ukraine had become one of the founding members of the Black Sea Economic Cooperation (BSEC) and put great effort into joining the Visegrad Group.¹⁰⁰ However, by mid-1993 even Ukraine's CEE neighbours began to

⁹⁶ *Reuters*, 17 and 31 December 1992, 3 January 1993; Borys Klymenko, 'Ukraine Not a Nuclear Bogeyman,' *The Ukrainian Weekly*, 17 January 1993.

⁹⁷ Nahaylo, p. 44.

⁹⁸ *Reuters*, 7 and 8 January and 3 June 1993. The same limited assurances were offered by all the members of the UN Security Council.

⁹⁹ Nahaylo, p.44.

¹⁰⁰ Oleksandr Pavliuk, 'Ukraine and Regional Cooperation in Central and Eastern Europe,' *Security Dialogue* 28 1997, p. 351.

distance themselves from Ukraine. They felt that Kiev's stance on nuclear issues, internal instability in Ukraine, and the unstable Ukrainian-Russian relationship, posed a threat to their own security.¹⁰¹ This mood change was evident in the CEE's negative response, in spring 1993, to Kravchuk's idea to create 'a zone of stability and security' in CEE.¹⁰²

This inflexible approach added to Ukrainian public perceptions that Kiev had been left to face the threat from Russia alone. In particular, the strict conditionality imposed by the West on financial aid, alienated the Ukrainian public. They saw a worrying parallel between their own situation and that of Bosnia-Herzegovina, which the West had failed to protect from Serb and Croat aggression.¹⁰³ If the West failed to intervene in the former Yugoslavia, it would certainly not involve itself in battles between Russia and Ukraine. This sentiment had a major impact on Ukrainian attitudes to nuclear weapons. In May 1992, polls had indicated that approximately 10 per cent of Ukrainians were in favour of retaining nuclear weapons. New polls, conducted in May 1993, indicated that support had increased to 40 per cent.¹⁰⁴

4. Russian ambitions

In July 1993, the Russian parliament passed a resolution declaring Sevastopol to be under Russian jurisdiction.¹⁰⁵ This was adopted unanimously, and with only one abstention. The move was labelled by Dmytro Pavlychko, chairman of the Ukrainian Parliamentary Committee on Foreign Affairs, as tantamount to a declaration of war.¹⁰⁶ Following criticism from the international community, including the UN, Yeltsin withdrew the resolution. However, this episode exacerbated existing tensions in Ukraine over Russian ambitions and separatist threats. The resolution had been symptomatic of the rise of the ultra-nationalist right in Moscow, which was considered to be a serious threat to Ukraine's

¹⁰¹ Ibid., p. 352.

¹⁰² Ibid., p. 351.

¹⁰³ Dunn (1993), p. 342.

¹⁰⁴ *The Economist*, 15 May 1993, p.20.

¹⁰⁵ Solchanyk, p. 3.

¹⁰⁶ Ibid.

independence at a time of great internal instability.¹⁰⁷ Hyperinflation, energy shortages and the drastic decline in living standards was causing widespread frustration and disillusionment, particularly in heavily Russified southern and eastern Ukraine and in the Ukrainian armed forces.

Part V: Nuclear posturing (phase 2), July 1993 to January 1994

Between July 1993 and January 1994, Ukraine maintained its position on the ownership and operational control over the strategic nuclear weapons deployed on its territory. The period of nuclear posturing therefore continued. However, this second phase of posturing differed from the first in two important ways. First, there was a divergence of opinion between the government and parliament over the way Ukraine should handle the nuclear issue. Kravchuk, in particular, was concerned about Ukraine's domestic crisis, Kiev's international isolation, and the safety of the nuclear weapons on Ukrainian soil. He was no longer prepared to be led by parliament's inflexible demands, and considered a compromise deal to be essential. Parliament, on the other hand, was unwilling to compromise. Second, the United States adopted a more flexible approach to the Ukrainian problem, lifting the conditions on financial assistance, promising economic aid in return for cooperation, and offering to act as a mediator between Moscow and Kiev. The result was a major step forward in disarmament negotiations amid political confusion in Kiev.

1. The Clinton administration's policy shift

In early May, the United States announced a significant shift in its policy towards Ukraine. The Bush administration had viewed the issue of Ukrainian nuclear weapons as solely a proliferation problem and was, therefore, inclined to deal with it by applying pressure on Ukraine. The new policy was based on a more flexible approach, on 'partnership' with Ukraine, and could include U.S. mediation between Ukraine and Russia on difficult issues. This new approach

¹⁰⁷ Economist Intelligence Unit, *Country Report: Ukraine*. 2nd Quarter 1993, pp. 11-15.

was explained by the U.S. Ambassador-at-Large, Strobe Talbott, during his three-day trip to Kiev in May, and confirmed by U.S. Defense Secretary, Les Aspin, during his formal visit in June.¹⁰⁸ However, this policy shift had little immediate impact. This is surprising, given the overwhelming security threats facing Ukraine at the time, and given Kiev's need for a 'partner' and mediator in its dealings with Russia. However, it is possible that the chaos created by the economic crisis and the escalating power struggle between the Prime Minister, President and parliament, delayed the impact.¹⁰⁹

The first sign that the Ukrainian leadership was beginning to respond to Washington's new policy came just three weeks after the Rada had passed an amendment reaffirming its ownership of - and control over - the nuclear weapons on Ukrainian territory.¹¹⁰ On 27 July, Ukrainian Defence Minister, Konstantin Morozov, announced that Ukraine had begun dismantling 10 nuclear-tipped missiles aimed at the United States, at a meeting with Aspin and other senior U.S. officials in the Pentagon.¹¹¹ In response to the gesture, the Clinton administration pledged to provide Ukraine with \$175 million in financial aid to speed the dismantlement effort, dropping its earlier condition that Ukraine first ratify START I and the NPT.¹¹² Although the sum offered did not come close to satisfying Ukrainian demands, Washington's decision to remove the strict conditions for financial assistance, imposed by the Bush administration, was a major breakthrough for Kiev. It was a sign that Ukraine's nuclear posturing was beginning to have the desired effect. The logjam had at last been broken, and Ukraine could use its inherited weapons as a bargaining chip.

¹⁰⁸ Potter (1995), p. 24; John W. R. Lepingwell, 'Negotiations Over Nuclear Weapons: The Past as Prologue?' *RFE/RL Research Reports* 3 (28 January) 1994a, p. 5.

¹⁰⁹ Lepingwell (1994a), p. 5.

¹¹⁰ *Reuters*, 2 July 1993.

¹¹¹ R. Jeffrey Smith, 'Ukraine Begins to Dismantle Nuclear Missiles Aimed at U.S.' *American Armed Forces Information Service*, 28 July 1993, p. 1.

¹¹² *Ibid.*

2. The Massandra Summit

The unexpected improvement in relations between Washington and Kiev appears to have encouraged the Ukrainian leadership that solutions to Ukraine's economic and political problems could and should be sought. At the Massandra Summit on 3 September 1993, the Ukrainian and Russian leaders signed a series of agreements which appeared to represent a major breakthrough in the resolution of the nuclear issue, the Black Sea Fleet, and the energy crisis. Firstly, Ukraine agreed to return all the nuclear weapons deployed in Ukraine to Russia within 24 months of the ratification of START I.¹¹³ In return, Russia agreed to compensate Ukraine for each warhead within a year of the warhead crossing the border into Russia, and to convert all the HEU in the warheads into low enriched uranium (LEU) to fuel Ukrainian nuclear reactors.¹¹⁴ Secondly, Ukraine apparently agreed to give up its share of the Black Sea Fleet in exchange for debt forgiveness on its energy arrears.¹¹⁵

The Massandra agreements were apparently to be kept secret, but the protocol on warhead transfer, signed by Kuchma and the Russian Prime Minister, Viktor Chernomyrdin, was published in a Kiev newspaper on 9 September. Parliament's reaction was dramatic. Kravchuk was accused of high treason, and Kuchma resigned in protest.¹¹⁶ Criticism was so widespread - even within the executive branch¹¹⁷ - that, despite the progress made at Massandra, Kravchuk felt compelled to deny that any resolution of the nuclear issue had been achieved, and changed the texts of the agreements so that Russia no longer recognised them as valid documents.¹¹⁸ Acrimonious exchanges, between Moscow and Kiev, followed Kravchuk's hasty retreat, leaving the president humiliated and exasperated and the disputes unresolved. The episode

¹¹³ 'Protocol on the Withdrawal of All Nuclear Warheads of Strategic Nuclear Forces Deployed in Ukraine to the Russian Federation.' Full text printed in Lepingwell (1994a), p. 6.

¹¹⁴ 'Basic Principles of the Utilisation of the Nuclear Warheads of Strategic Nuclear Forces Deployed in Ukraine,' and 'Agreement Between the Government of Ukraine and the Government of Russia on the Utilisation of Nuclear Warheads.' Summary printed in Lepingwell (1994a), p. 6.

¹¹⁵ *Ibid.*, pp. 6-7; Markus, p. 35.

¹¹⁶ Olli-Pekka Jalonen, *Captors of Denuclearisation? Belarus, Kazakhstan, Ukraine and Nuclear Disarmament*. Research Report No. 54 (Tampere: Tampere Peace Research Institute, 1994), pp. 56-57.

¹¹⁷ Even Morozov, who always stood by Kravchuk over the nuclear issue, expressed his displeasure over the Black Sea Fleet accord. Lepingwell (1994a), p. 7.

¹¹⁸ Each side accused the other of deception in the preparation of the final document. Potter (1995), p. 24.

had demonstrated the depth of anti-Russian feeling in Ukraine and the futility of engaging in bilateral negotiations with Moscow.

3. Ratification of START I

The final months of 1993 were characterised by the growing divergence between Kravchuk's handling of the nuclear issue and the will of parliament. At the time, Ukraine's economy was rapidly worsening, Western pressure to denuclearise was increasing, and the issue of Ukraine's massive debt to Russia for energy supplies remained unresolved. Against this backdrop, Kravchuk welcomed U.S. Secretary of State, Warren Christopher, to Kiev to discuss the nuclear issue. During their meetings, Christopher promised not only financial and technical assistance for denuclearisation, but also economic aid if Ukraine ratified the two treaties. In return, the Ukrainian president promised that the Rada would no longer drag its feet over ratification - START and the NPT treaties would be considered in November.

On 18 November 1993, the Ukrainian parliament voted by 254 votes to nine to ratify the START I treaty. However, it attached 13 conditions to the treaty, undermining the nonproliferation value of the act.¹¹⁹ The most significant of these was the stipulation that Ukraine did not consider itself bound by article V of the Lisbon Protocol, which obliged Ukraine to adhere to the NPT as a NNWS 'in the shortest possible time.'¹²⁰ The Rada resolution, although affirming Ukraine's intention to 'move towards a non-nuclear status,' also claimed that only 36 per cent of the launchers and 42 per cent of the nuclear warheads on Ukrainian territory were subject to elimination.¹²¹ It made implementation of the START Treaty contingent upon the provision to Ukraine of security guarantees, financial assistance for weapons dismantlement, and adequate compensation for nuclear warhead material, including material from the tactical

¹¹⁹ Pande, p.243.

¹²⁰ Ibid., p. 25; Victor Zaborosky, *Nuclear Disarmament, and Nonproliferation: The Evolution of the Ukrainian Case*. CSIA Discussion Paper (June) 1994.

¹²¹ 'The Ukrainian Parliament's Resolution on START-I Ratification.' Lepingwell (1994a), p. 9.

warheads withdrawn to Russia in 1992.¹²² In addition, the resolution instructed the President of Ukraine to negotiate with other parties on these and other issues.¹²³ These stipulations were so fundamental that they amounted to virtual non-ratification.

4. The trilateral deal concept

Despite the powerful international response to the Rada's resolution - which was uniformly negative - a new impetus was given to the negotiations between Washington and Kiev in December.¹²⁴ First, the Ukrainian government and parliamentary leadership had not anticipated the powerful international backlash against its action. This may have given Kravchuk, who had accurately predicted the international hostility, more leverage in the Rada. Second, more than ever, Kravchuk was driven by a sense that Ukraine was risking international isolation because of its stand on nuclear weapons. The West's threat to block economic assistance and membership of NATO's 'Partnership for Peace' programme if Ukraine did not change its stance, was taken seriously. Kiev was also pointedly omitted from Clinton's visit to Europe, although Moscow and Minsk were included, and Russia was increasing diplomatic pressure on Ukraine, and hinting that it might resort to economic pressure to force Ukraine to cooperate. The third factor, new evidence showing that warheads in Ukraine were becoming hazardous, may have been a crucial incentive for all three parties - Moscow, the United States and Ukraine - to engage in a new round of urgent talks.¹²⁵

¹²² Ibid.

¹²³ Ibid.

¹²⁴ Clinton called Kravchuk personally to express his disappointment and to urge the parliament to reconsider its action. The Russian Foreign Ministry threatened retaliatory steps, and the NATO states agreed to exclude Ukraine from the new 'Partnership for Peace' programme if it continued to block progress on nuclear disarmament and nonproliferation.

¹²⁵ Reports that Ukraine's nuclear arsenal was becoming unsafe, had been circulating in Russia and the United States since April 1993, but these concerns were not taken seriously until December. According to Russian experts, it was practically impossible to establish who was responsible for the 'presence, condition and safe exploitation of nuclear material' in Ukraine. Storage facilities were overstocked with warheads and combat blocks taken off active duty, leading to a massive increase in radiation levels. A sizeable number of nuclear weapon components had outlasted their guaranteed life and were in need of replacement to avoid possible malfunctions and emergencies. Furthermore, operational facilities had not been serviced on schedule and some had outlived their service life and were in 'accident prone condition.' By mid-December 1993, even the Ukrainian Ministry of Defence admitted in a report that there was a problem with the safety of the warheads, although this was unlikely to lead to 'a second Chernobyl.' Yevgheny Maslin, 'Ukraine Weapons Pose Risk,' *The First Independent Russian-Ukrainian Newspaper*, (19 April-2 May) 1993, p. 1; John W. R. Lepingwell, 'The Trilateral Agreement on Nuclear Weapons,' *RFE/RL Research Reports* 3 (28 January) 1993, p. 19; Taras Kuzio, 'Ukrainian Security Fears Justified in Wake of Russian Elections,' *The Ukrainian Weekly*, 23 January 1993.

In mid-December, a special team of Russian and U.S. government officials arrived in Kiev to conduct trilateral talks. This move was itself a breakthrough, as it marked Washington's first direct mediation between Russia and Ukraine. According to the leader of the Ukrainian delegation, Deputy Prime Minister, Vitali Shmarov, the talks produced a satisfactory proposal for the first time, in which Russia would write-off Ukraine's energy debt to compensate Ukraine for its tactical nuclear weapons. Immediately after these negotiations, U.S. Vice President, Al Gore, met with Kravchuk in Budapest, and indicated that a preliminary agreement on denuclearisation had been reached with the United States and Russia. A few days later, Shmarov announced - without first consulting parliament - that Ukraine had removed 17 ICBMs from combat alert and that it would deactivate a total of 20 by the end of the year.

5. The Trilateral Statement

On 14 January the Presidents of the Ukraine, Russia and United States issued the Trilateral Statement in Moscow. Under the agreement, Ukraine agreed to transfer at least 200 SS-19s and SS-24s to Russia within 10 months, and to deactivate all SS-24s remaining on Ukrainian soil.¹²⁶ Ukraine also repeated its pledge that it would accede to the NPT 'in the shortest possible time.' In return, Ukraine would receive \$1 billion worth of compensation for the HEU from the strategic warheads, to be provided in the form of nuclear reactor fuel from Russia.¹²⁷ According to Ukrainian estimates, this fuel would run its nuclear reactors for seven years, which would go some way to solving the energy crisis.¹²⁸ The text of the agreement also stressed the importance of equal partnership between the three states as well as 'respect for the independence, sovereignty, and territorial integrity of each nation.'¹²⁹

This deal went a long way towards satisfying Ukraine's demands, but three of Kiev's stipulations were not met. First, there was no clear agreement

¹²⁶ *Ibid.*, p.17.

¹²⁷ Andreis and Calogero, pp. 16-17.

¹²⁸ *Interfax*, 18 January 1994.

¹²⁹ 'The Trilateral Agreement on Ukrainian Nuclear Weapons.' Full text printed in Lepingwell (1993), p. 14.

on compensation for the tactical nuclear weapons withdrawn from Ukraine in 1991-92.¹³⁰ Second, the proposed financial compensation offered for the warheads was significantly lower than previously predicted by Ukrainian politicians.¹³¹ Third, whilst the agreement contained some security assurances, they did not go beyond those previously offered by the United States and other states - they were a repeat of the standard assurances given to non-nuclear signatories of the NPT.¹³² However, each of these omissions was replaced with a compromise deal. The United States and Russia gave Kravchuk a verbal promise that compensation for the tactical nuclear weapons would be jointly worked out at a later date.¹³³ To ease concern over the financial package, Clinton pledged to press for assistance for Ukraine from international financial institutions, such as the International Monetary Fund (IMF) and the World Bank.¹³⁴ To help alleviate Kiev's insecurity, Clinton offered Ukraine membership in the 'Partnership for Peace' programme, which would offer increased opportunities for military cooperation between NATO and Ukraine, as well as consultations in the event of a threat to Ukraine's security.¹³⁵

Part VI: Nuclear posturing (phase 3), February-December 1994

Ukraine's nuclear posturing continued for most of 1994, but three factors gradually softened the Rada's position. First, the economic crisis became so severe that parliament's attention shifted from international to domestic issues. Second, U.S. aid began to flow into Ukraine from late 1993, giving the parliamentary deputies reason to believe that the United States would fulfil its promises. Third, in July 1994, Kuchma was elected President. He had more influence in the Rada than Kravchuk, and was able to generate support for a more pragmatic approach to the nuclear issue. He argued that, if Ukraine was to

¹³⁰ Ibid.

¹³¹ At one point, Kravchuk had claimed that the total value of the warheads might reach \$6 billion. While this was an overestimate, there were many other politicians who proposed this level of compensation. *Reuters*, 25 October 1993.

¹³² Lepingwell (1993), p. 17.

¹³³ *Radio Ukraine*, 14 January 1994. Cited in Lepingwell (1993), p. 16.

¹³⁴ Ibid., p. 17.

¹³⁵ Ibid.

survive as an independent state, it would have to adjust its priorities. This included the introduction of a programme of economic reform and a policy of greater cooperation with Russia in the interests of resource security and economic stability. As a result of these changes, in November 1994, the Rada voted to accede to the NPT as a NNWS in return for a package of economic concessions.

1. On the brink of collapse

Kravchuk's willingness to sign the compromise deal showed his desperation over Ukraine's dire domestic crisis. Two events in January 1994 showed that Kravchuk's concerns were justified. On the 23 January, the ultra-nationalist Russian Liberal Democratic Party, led by Vladimir Zhirinovskiy, made significant gains in the Russian elections. His comments - that if he became Russian leader, he would re-annex Ukraine and other former Soviet States, if necessary by using nuclear weapons - sent shock waves through Kiev.¹³⁶ The following week, on 30 January, the people of Crimea chose Yuri Meshkov, the unequivocal proponent of Crimean independence, to be their first president. This led to more panic in Kiev, where it was feared that Crimean independence would set a precedent for separatist movements elsewhere in Ukraine, particularly in the heavily industrialised and Russified Donbas region, which had been a hotbed of social and economic discontent throughout 1993.¹³⁷ These fears were reinforced by a report by the CIA, uncovered by the *Washington Post*, which warned that Ukraine was in danger of 'splitting along ethnic and geographic

¹³⁶ Kuzio (1993), p. 2. Solchanyk, p. 1; Frank Umbach, 'The Security of an Independent Ukraine,' *Jane's Intelligence Review* (March) 1994, p. 114;

¹³⁷ The other areas of concern were Sub-Carpathia, where the population considered itself to be ethnically distinct Ruthenians. The region was only added to Ukraine in 1945, having previously belonged to Hungary until 1918, Czechoslovakia until 1938, and having enjoyed a short period of independence as the Republic of Carpatho-Ukraine until the Hungarian invasion of 1939. Northern Bukovyna has only been part of Ukraine since 1940, when it was seized from Romania under the terms of the Nazi-Soviet Pact. Although 92.8 per cent of the population voted for Ukrainian independence in 1991, the economic hardships following independence gave rise to a separatist movement. In 1993-4, Ukraine was suspicious that Romania was fanning the flames of anti-Ukrainian sentiment in the area, in the same way that it feared Hungary's interference in Carpathia and Russian involvement in Crimea. These problems showed how a weak national identity and tradition of statehood can provoke instability and insecurity at times of socio-economic crisis in a multinational state like Ukraine. Solchanyk, p. 1; Umbach, p. 115; Andrew Wilson, 'The Elections in Crimea,' *RFE/RL Research Reports* 3 (24 June) 1994, p. 7.

lines.'¹³⁸ As a result of these developments, the 'yugoslavisation' of Ukraine appeared imminent - to the extent that even the most nationalistic and pro-nuclear parliamentary deputies began to take the domestic crisis more seriously.¹³⁹

2. The Rada lifts the START I conditions

In a letter to the parliament, dated 24 January, Kravchuk requested that the Rada repeal the earlier conditions that it had attached to START I ratification, approve the exchange of the START articles of ratification, and approve Ukraine's accession to the NPT as a non-nuclear weapons party.¹⁴⁰ On 3 February the Ukrainian parliament voted overwhelmingly in favour of the first two requests. Of the 292 deputies in the hall, 260 voted in favour of full ratification of START, with three against and 29 abstentions.¹⁴¹ The vote came after three weeks of intense lobbying by Kravchuk and the foreign and defence ministers and followed a stirring speech by the president, in which he warned of the dangers of economic collapse, international isolation and a nuclear catastrophe.¹⁴² At first glance, the vote seemed to suggest that the parliament was no longer opposed to Kravchuk's programme for nuclear disarmament. However, parliament refused the President's third request - approval of Ukraine's accession to the NPT, and in subsequent weeks continued to claim ownership of the strategic warheads based in Ukraine whilst stressing the need for legally binding security guarantees and financial assistance in return for disarmament.¹⁴³

¹³⁸ Quoted in Monika Jung, 'The Donbas Factor in the Ukrainian Elections,' *RFE/RL Research Reports* 3 (25 March) 1994, p. 51.

¹³⁹ Umbach, p. 114.

¹⁴⁰ Potter, p. 27.

¹⁴¹ Taras Kuzio, 'From Pariah to Partner - Ukraine and Nuclear Weapons,' *Jane's Intelligence Review* (May) 1994, p. 204.

¹⁴² New details of the deteriorating nuclear warheads were provided by the Ukrainian newspapers, *Izvestiya* and *Krasnaya Zvezda*. The reports claimed that 60 per cent of the SRF units were not combat-ready because of a shortage of officers. They also noted that there were 500 nuclear warheads in the Pervomaik storage facility, some six to eight times more than the normal number, and stressed that the crowded storage conditions posed a safety risk. *Izvestiya*, 25 January 1994; *Krasnaya Zvezda*, 29 January 1994. Quoted in John W. R. Lepingwell, 'Ukrainian Parliament Removes START-I Conditions,' *RFL/RL Research Reports* 3 (25 February) 1994b, p. 38.

¹⁴³ *Ibid.*, p. 37.

3. Parliament's new pragmatism

During 1994, parliament took a new, more pragmatic approach to the nuclear dispute, aimed at averting a national catastrophe. Its focus shifted from the external threat to Ukraine's sovereignty and territorial integrity to the internal threat of violent conflict between Ukraine's ethnic groups, and economic collapse. Although the Rada's deputies maintained their position on the issue of security guarantees, far more time was spent trying to find a way out of Ukraine's economic crisis. There was a sense that time was running out: the international community was aware that Ukraine's inherited weapons were deteriorating, and would soon present a serious risk to Ukraine. The leverage that the weapons could provide would soon expire, after which they would become more of a burden than an asset to Ukraine.¹⁴⁴ Their only remaining utility was to obtain maximum concessions as quickly as possible.

Ukraine's most serious problem was the energy shortage. By March 1994, Ukraine owed the Russian supplier, Gazprom, about 1.5 trillion roubles (\$900 million), and Russia was threatening to gradually cut Russian supplies until it could pay its arrears.¹⁴⁵ This presented a major crisis for Ukraine, as Gazprom supplied 60 per cent of its gas needs and Turkmenistan, Ukraine's other main supplier, cut off shipments on 20 February due to non-payment of a debt of \$700.¹⁴⁶ During his visit to Washington, Kravchuk informed Clinton that 'the cut-down in gas deliveries may lead to tensions in the economy and social cataclysms and may, I repeat, may influence disarmament.'¹⁴⁷ Similar warnings followed, as the Ukrainian government considered the implications of international financial reports, which assessed the prospects of economic recovery in Ukraine and concluded that they were 'virtually nil.' Experts predicted

¹⁴⁴ Economist Intelligence Unit, *Country Report: Ukraine*. 2nd Quarter (London: EIU, 1994), p. 18.

¹⁴⁵ Marta Kolomayets, 'Kravchuk Denies Report of Linkage Between Nukes Transfer, Gas Supply,' *The Ukrainian Weekly*, 13 March 1994. The extent of Ukraine's energy shortage was colourfully displayed in a hostage-taking incident in eastern Ukraine in February 1994. A hostage-taker, who was hoping to fly to the United States to escape arrest, demanded that he be taken to Russia to board a flight on hearing that the local airports had been closed due to a lack of aviation fuel in eastern Ukraine. *The Ukrainian Weekly*, 13 February 1994.

¹⁴⁶ Kolomayets, p. 1.

¹⁴⁷ *Ibid.*

an annual average inflation in the region of 5000 per cent for 1994 and expected GDP to fall by a further 14 per cent on 1993 levels.¹⁴⁸

4. Financial assistance

From late 1993 onwards, aid had begun to flow from the United States to Ukraine as an inducement to Kiev to fulfil its promises.¹⁴⁹ In October 1993, the First Nunn-Lugar umbrella agreements had been signed and, after the Trilateral Statement was signed in January 1994, offers of economic assistance multiplied.¹⁵⁰ In March, following Kravchuk's visit, Clinton doubled to \$350 million the level of U.S. assistance to Ukraine for nuclear disarmament. At this point the subject of economic reform became attached to financial assistance. The Clinton administration wanted to see concrete evidence that steps were being taken to reverse the economic decline - specifically liberal economic reforms. In November and December 1993, the Cabinet of Ministers had proposed a return to: full state regulation of prices; the nationalisation of commercial banks; and the banning of strikes and rallies, as a solution to Ukraine's economic crisis.¹⁵¹ This proposal had received widespread support in parliament, stimulating fears in Washington of a return to communism. In an effort to prevent this, the United States insisted that that aid should be linked to economic reform.

5. The election of Kuchma

An important turning point in the handling of both the nuclear issue and the economic crisis, came with the election of Leonid Kuchma to the presidency in July 1994. On assuming power, he began to push for a programme of market-based economic reform. As a result of giving the West what it wanted, Kuchma's presidency produced almost immediate results. At the Naples Summit in July, the Group of Seven (G-7) industrialised nations granted Ukraine \$4 billion in

¹⁴⁸ Estimates provided by *World Economic Outlook*, IMF and EIU. Quoted in Economist Intelligence Unit, 2nd quarter 1994, p. 11.

¹⁴⁹ Andreis and Calogero, p. 22.

¹⁵⁰ Ibid.

¹⁵¹ Economist Intelligence Unit, *Country Report: Ukraine*. 1st Quarter (London: EIU, 1994), p. 20.

assistance for economic reform.¹⁵² In August, Kuchma was invited to the United States to discuss economic cooperation between the two countries. Al Gore pledged to help Ukraine 'proceed down the difficult road of economic reform,' reaffirming the partnership between the two countries, outlining prospects for economic and technological cooperation, and promising more aid.¹⁵³ The new president also pushed for a policy of greater cooperation with Russia.¹⁵⁴ He agreed to lease the port of Sevastopol to Russia for use by the Russian section of the Black Sea Fleet.¹⁵⁵ The transfer of warheads from Ukraine to Russia, agreed in January, was accelerated, and in return Russia fulfilled its part of the agreement, supplying 75 tons of reactor fuel to Ukraine.¹⁵⁶

6. The vote on the NPT

The Rada decided to review formally the question of Ukraine's NPT status in November 1994. With the Nunn-Lugar 'Cooperative Threat Reduction' assistance being delivered by the United States, nuclear fuel being supplied by Russia, and the attentions of the populace focused on domestic rather than international issues, parliament was much more willing to compromise over the nuclear issue. In the debates leading up to the November vote, Kuchma and his allies reasserted their belief that Kiev's nuclear weapons were becoming a burden - they presented a serious financial drain without any return in sight.¹⁵⁷ He also pointed out that they did not improve Ukraine's security situation, as Ukraine was not able to use the weapons anyway.¹⁵⁸ On 16 November 1994, parliament voted overwhelmingly to accede to the NPT as a NNWS. Although parliament attached reservations to its accession decision that provoked major resistance from the Russian Foreign Ministry, on 5 December 1994, Ukraine finally acceded to the treaty at the Conference on Security and Cooperation in

¹⁵² Andreis and Calogero, p. 22.

¹⁵³ *The Ukrainian Weekly*, 7 August 1994.

¹⁵⁴ Andreis and Calogero, p. 17.

¹⁵⁵ David R. Marples, 'Ukraine After the Presidential Election,' *RFE/RL Research Reports* 3 (12 August) 1994, p. 7.

¹⁵⁶ Dunbar Lockwood, 'Kuchma Reverses Field on NPT, Ready to Seek Vote in Parliament,' *Arms Control Today* (September) 1994, p. 25.

¹⁵⁷ A. Cernik, 'Ukraine Advances Non-proliferation,' *International Review* 16 (Spring) 1995, p. 5.

¹⁵⁸ *Ibid.*

Europe (CSCE) Summit in Budapest. The three NPT repository governments accepted Ukraine's NPT instruments of accession, and signed the 'Memorandum on Security Assurances.'¹⁵⁹ This attempted to deal with a number of Ukraine's lingering doubts about the logic of unilateral disarmament. Firstly, the non-Ukrainian signatories clearly committed themselves not to use nuclear weapons against Ukraine, not to commit acts of aggression against it, and not to use methods of economic coercion.¹⁶⁰ Secondly, the signatories all agreed that Ukraine would accede to the Treaty as a NNWS that possessed nuclear weapons for a specified period of time.¹⁶¹ However, neither the 'Memorandum on Security Assurances,' nor the 'Charter for American-Ukrainian Partnership, Friendship, and Cooperation' nor any subsequent agreements, provided Ukraine with the 'legally binding' security guarantees that it had been demanding.¹⁶² Despite this, Ukraine transferred the last of its nuclear warheads to Russia on 1 June 1996, following Moscow's agreement to provide Ukraine with \$450 million in compensation for the tactical warheads.¹⁶³

Part VII: Empirical conclusions

Seven principal conclusions can be drawn from this empirical analysis of Ukraine's nuclear policy:

1. The perceived political, military, and economic threats posed by Russia were partly responsible for creating the insecurity that fuelled Ukraine's decision to retain the nuclear arsenal inherited from the Soviet Union. Fear of Russian neo-imperialism, provoked by: Moscow's stance over the Crimea and the Black Sea Fleet; Russia's refusal to supply cheap energy; and perceived attempts by Moscow to undermine Kiev diplomatically, contributed to Ukraine's insecurity.
2. The failure of the West - and in particular, the United States - to admit Ukraine into a Western security alliance following independence, created strong

¹⁵⁹ Gow, p. 128.

¹⁶⁰ Ibid.

¹⁶¹ Ibid.

¹⁶² The full texts of these agreements are printed in *The Ukrainian Quarterly* 50 (Spring) 1995, pp. 410-427.

¹⁶³ *Reuters*, 4 June 1996; Craig Cerniello, 'Ukraine Completes Final Transfer of Nuclear Warheads to Russia,' *Arms Control Today* (May/June) 1996, p. 22.

proliferation pressures in Kiev. If the West had provided Ukraine with security guarantees and economic assistance at the outset, it is unlikely that the nuclear weapons would have been retained by Kravchuk.

3. Mounting international isolation following independence caused Ukraine's nuclear diplomacy to become more adversarial. This situation was reversed when the United States adopted a policy aimed at integrating Ukraine into the international system.

4. The internal characteristics of the Ukrainian state contributed to the insecurity that drove its nuclear policy. For most of the period, this constituted a direct proliferation cause, as Ukraine's lack of territorial integrity and socio-political cohesion, coupled with its weak institutions, economic difficulties, and insufficient military capabilities, created overwhelming domestic vulnerabilities.

5. Ukraine openly used the nuclear weapons that it inherited from the Soviet Union to increase its political and economic leverage. Nuclear weapons were viewed as a form of insurance to prevent political and economic blackmail by the Soviet Union and to extract maximum military, political and economic concessions from the United States and the West.

6. Certain aspects of Ukraine's nuclear bargaining between 1991 and 1994 cannot be explained without reference to the beliefs of individual parliamentary deputies and policymakers. In particular, Kiev's failure to ratify the NPT for 18 months following Washington's change of policy in summer 1993, can only be understood if the role and ideas of influential figures within the Rada are taken into account.

7. Ukraine appears to have agreed to become a NNWS for three principal reasons. First, the United States and Russia provided an attractive package of military, economic and political concessions in return for ratification of the NPT. Second, the nuclear weapons stationed on Ukrainian soil were deteriorating, and it was widely believed that they would soon pose a serious environmental threat to the state if they were not dismantled. Third, Kiev's priorities changed as the threat of economic collapse loomed. Ukraine believed that its foreign policy goals could be achieved if it relinquished nuclear weapons embraced international

norms. This was only possible following Washington's policy change in May 1993 and Kuchma's election to the presidency in July 1994.

Part VIII: Theoretical analysis

This section pitches the different neorealist explanations and predictions of Ukraine's nuclear policies against the empirical record, to identify the areas where there is a close fit between theory and evidence. The principal aim is to find a convincing theoretical explanation of why Ukraine's political leaders decided to retain the nuclear weapons inherited from the Soviet Union, despite strong international pressure to relinquish them, and why Kiev finally acceded to the NPT after over three years of nuclear posturing. Can theories based on the assumptions that Ukraine was a rational, unitary actor, driven by power and security dynamics explain Kiev's nuclear diplomacy, however complex?

1. Parsimonious neorealism

What light can parsimonious neorealism shed on Ukraine's nuclear diplomacy since 1991? The empirical analysis presented in the first part of this chapter indicates that, up to a point, structural forces did influence Ukraine's nuclear behaviour. On gaining independence Kiev's political leaders planned to capitalise on the historic Cold War divisions between East and West. At first, they were optimistic that, if they made the right moves, the United States would welcome the new state as an ally against its old enemy. Kravchuk had hoped that Ukraine would be able to adopt the strategy that South Korea had successfully pursued under bipolarity: the acquisition of a nuclear umbrella in return for a commitment to nuclear nonproliferation. However, due to the structural changes at the end of the Cold War, such a strategy was no longer feasible. The new distribution of power across the system had significantly weakened the incentives for the United States to extend security guarantees to vulnerable states. The trend in Washington was to minimise new commitments and retract existing ones. As a result, Ukraine was left to fend for its self against

its more powerful neighbour. This helps explain Ukraine's decision to retain the nuclear weapons inherited from the Soviet Union.

Although this structural explanation provides some insight into the difficulties Ukraine faced in its attempt to secure security guarantees, its explanatory power has proved to be limited, and its predictive power to be poor. For example, on the basis of structural arguments, Mearsheimer predicted in 1993 that Ukraine would never relinquish the nuclear weapons on Ukrainian soil, due to the new tensions created by the multipolar international system.¹⁶⁴ He argued that the United States should not even try to interfere with structural dynamics because it was 'inevitable' that Kiev would retain the nuclear arsenal. Instead, he advocated a policy of accommodation, arguing that Ukraine's nuclear capability could be used as a buffer between East and West to promote peace in the region. The fact that Mearsheimer's arguments were discredited when Ukraine ratified the NPT and transferred the nuclear weapons to Russia, illustrates the drawbacks of using simple theories to explain complex phenomena.¹⁶⁵ It does not completely undermine the validity of the theory, but it reveals its limitations. As Waltz has sometimes argued, parsimonious neorealism can only be expected to 'set the scene' - because all the detail is missing, it offers little scope for understanding or predicting the actions of individual states.

2. Balance of power theory

Balance of power theory can also lead to a distorted analysis of the conditions and motivations that have influenced Kiev's nuclear decisionmaking. However, as the following analysis reveals, it can shed some light on Ukraine's behaviour if predictions and explanations are based on Kiev's assessment of Russia's intentions as well as its capabilities.

¹⁶⁴ Mearsheimer (1993), pp. 50-66.

¹⁶⁵ When questioned on this subject, Mearsheimer responded that no theory will ever provide predictions that are 100 per cent accurate. He argued that if a theory is 70 per cent accurate, then it is a strong theory: the occasional miss-hit is nothing to worry about. But, on this basis, parsimonious neorealism is still a poor theory. Since the end of the Cold War, few states have behaved in the way that the theory predicted - if anything, the opposite behaviour has occurred. Personal interview with John J. Mearsheimer, University of Chicago, 15 November 1996.

As Walt has argued, arms racing dynamics are created by expectations of aggressors' behaviour, not just by knowledge of their strategic power.¹⁶⁶ This helps explain why Ukraine decided to transfer the nuclear weapons to Russia following independence, as its political leaders had originally believed that Ukraine would be invited to join the Western bloc. They hoped this security arrangement would minimise the threat from Russia, as Moscow's ambitions would be held in check by the balance of power. As a result, knowledge of Russia's superior conventional and nuclear capabilities did not worry Ukraine's political leaders, and the decision was taken to transfer all strategic and tactical nuclear weapons to Russia for dismantlement by the end of 1994. However, arms racing dynamics were released when Ukrainian expectations changed, which explains Kravchuk's U-turn on the nonproliferation commitments made at Alm Ata and Minsk. Ukraine's experience of Western Russo-centrism and Russian neo-imperialism during the first months of independence rapidly eroded the idealism and optimism that lay behind agreements made in December 1991. As doubts emerged over Russia's military intentions and Ukraine's ability to defend its borders, Kravchuk took two crucial steps to increase Ukraine's chances of survival. First, he implemented a series of emergency plans to create independent air, sea and land forces. Second, he took the decision to retain the nuclear weapons inherited from the Soviet Union.

This is not to suggest that Ukraine's nuclear decisionmakers thought about the nuclear issue in traditional strategic terms. If they had, the tactical nuclear weapons - the only part of the inherited arsenal with strategic utility in relation to Russia - would have been retained. As it was, these weapons were transferred to Russia for dismantlement by July 1992. The strategic nuclear weapons on Ukrainian territory would have posed several dilemmas if Ukraine's leaders had been hoping to use them to deter Russia. Firstly, Ukraine's SS-24s could not strike targets at a distance below 2000 km.¹⁶⁷ Secondly, although Ukraine's SS-19s were theoretically able to strike targets at relatively short

¹⁶⁶ Stephen Walt, *The Origins of Alliances* (Ithaca: Cornell University Press, 1987).

¹⁶⁷ Andreis and Calogero, p. 20.

distances, Ukraine was unable to maintain them because they were built in Russia and used a highly toxic and volatile liquid fuel.¹⁶⁸ Thirdly, the cruise missiles for strategic bombers stored in Ukraine were 'disabled in place' and re-targeting them would have been virtually impossible for Ukraine because it did not have access to data from geodetic satellites.¹⁶⁹ Lastly, Kiev was unable to maintain its blackjacks, and was short of qualified pilots, flight plans and navigational equipment, which was transferred to Russia.¹⁷⁰ Despite this lack of a credible nuclear deterrent, Foreign Minister Anatoly Zlenko occasionally made references to the possibility that Ukraine would retain its nuclear arsenal for this purpose.¹⁷¹ Indeed, in autumn 1992, when Russia appeared most threatening and the West particularly unsympathetic, the strategic nuclear forces were incorporated into the Ukrainian armed forces and efforts were made to develop Ukrainian launch codes to circumvent the Russian blocking devices on the ICBMs. However, most of the evidence indicates that this was a game of bluff.

In reality, Ukraine's leaders were aware of the lack of a strategic rationale for the nuclear weapons stationed on Ukrainian territory, as Kuchma's contributions to the debates in the Rada reveal.¹⁷² The weapons were never intended for internal balancing, despite the Tolubko's insistence that an operational and modernised nuclear arsenal should be developed. They were, however, intended to act as leverage to enable Ukraine to balance externally. Kiev wanted firm security guarantees from the United States, and one of the aims of its nuclear posturing was to obtain such a commitment.¹⁷³

However, this cannot have been Ukraine's only reason for keeping the nuclear weapons. From March 1992 to November 1994, Ukraine was consistent in its demands for legally binding security guarantees, and claimed

¹⁶⁸ W. H. Kincade, 'Nuclear Weapons in Ukraine: Hollow Threat, Wasting Asset,' *Arms Control Today* 23 (July-August) 1993, pp. 13-18.

¹⁶⁹ Andreis and Calogero, p. 21.

¹⁷⁰ Christoph Bluth, 'Nuclear Weapons in Ukraine,' *Bulletin of Arms Control* (May) 1994, p.19.

¹⁷¹ Anatoly Zlenko, 'The Foreign Policy of Ukraine: Principles Shaping and Problems of Implementing It,' *International Affairs* (January) 1994, p.15; Anatoly Zlenko, 'Ukrainian Security and the Nuclear Dilemma,' *NATO Review* (August) 1993, p. 11.

¹⁷² Cernik, p. 5.

¹⁷³ Those that use this argument include: Andreis and Calogero, pp. 19-21; F. Stephen Larrabee, 'Ukraine: Europe's Next Crisis,' *Arms Control Today* (July/August) 1994, p. 18-19; Olga Alexandrova, 'Russia as a Factor in Ukrainian Security Concepts,' *Aussenpolitik* 1 1994, pp. 76-78.

that it would not accede to the NPT as a NNWS unless these were forthcoming. Yet, in December 1994, Ukraine's position changed. At the Budapest Summit, Ukraine formally committed itself to unilateral nuclear disarmament without first having secured legally binding security guarantees. The signatories of the 'Memorandum on Security Assurances' pledged not to use nuclear weapons against Ukraine, but neither this agreement, nor subsequent commitments, met Ukraine's earlier demands. They represented the vague promises given by the NWS to any NNWS party to the NPT. In this case, why did Ukraine finally accede to the NPT? The fact that Ukraine was given special status - i.e. that it could possess nuclear weapons for a specified period of time - certainly eased the immediate pressures, but this does not detract from the point that Ukraine had agreed to unilaterally disarm without first obtaining security guarantees.¹⁷⁴ This suggests that Ukraine's nuclear behaviour was being influenced by additional factors that traditional balance of power theory cannot account for.

3. Structural realism

Structural realism provides a theoretical framework that has greater explanatory leverage than either parsimonious neorealism or traditional balance of power theory. First, the disaggregation of power allows for an expanded definition of state interests and goals. As a result, security is defined more broadly, and the role that economic factors play in shaping nuclear policy becomes an important part of the explanation. Second, the assumption that states are functionally differentiated brings the state into the analysis. As a result, insight is provided into the impact that unit attributes can have on foreign policy choices. Third, the concept of interaction capacity provides the theoretical link between the units and the system structure. This overcomes the problem of having to choose between anarchy and interdependence as sources of explanation, by building a

¹⁷⁴ The security assurances offered to Ukraine in 1994 were not legally binding - they did not constitute the firm 'guarantees' that Kiev's political leaders had been demanding. However, in July 1996, the IJC declared that the pledges made by the NWS at the 1995 NPT Extension Conference - six months after Ukraine acceded to the NPT - did constitute legally binding promises. Ukraine could not have predicted this development 18 months before it happened. Furthermore, the last of the strategic nuclear weapons were returned to Russia before the IJC advisory opinion was reached. This

bridge between the two concepts. Important omissions remain, as this section will show but, overall, structural realism allows for a greater understanding of the factors that have influenced Ukraine's nuclear behaviour.

Ukraine's low attributive power was partly responsible for its nuclear posturing between 1992 and 1994.¹⁷⁵ The newly independent state faced serious internal threats to its survival. Ukraine lacked territorial integrity due to the historic border disputes with Russia, Hungary, Czechoslovakia and Romania, and social and political cohesion due to the ethnic divisions between the different regions. In particular, the ethnic rivalry between the estimated 40 million Ukrainian and 12 million Russian speaking inhabitants, posed a serious problem for political leaders trying to strengthen the socio-political cohesion of the state.¹⁷⁶ Ukraine also lacked indigenous supplies of oil and gas and inherited an economy in serious decline. Despite this, Kravchuk rashly promised that, once independent, Ukraine could provide a much better standard of living to its inhabitants than the Soviet Union had done.¹⁷⁷ This promise proved to be impossible to keep, putting pressure on the government to find other ways of satisfying the disillusioned electorate. The government was therefore forced to tackle the difficult task of state-building whilst facing a permanent asymmetry of power with Russia, *and* internal conditions that threatened a Yugoslav-style civil war.

Low attributive power undermined Ukraine's ability to interact in the international system. Ukraine's principal foreign policy goal was to attract the assistance and cooperation of other states, but because the country looked weak, unstable, and unlikely to survive as an independent entity, Ukraine's neighbours and potential allies were more inclined to cultivate good relations with

suggests that, by December 1994, Kiev's foreign policy goals had changed and that this readjustment of priorities was a long-term development.

¹⁷⁵ Scholars who have identified the causal relationship between Ukraine's low attributive power and proliferation pressures include: Gow, p. 116; Dunn (1993), p. 342; Potter (1995), p. 52; Sherman W. Garnett, 'The Sources and Conduct of Ukrainian Nuclear Policy, November 1992 to January 1994,' in Quester (1995), *op. cit.*, p. 125; Steven E. Miller, 'The Ukrainian Security Dilemma,' *DACS Seminar* (MIT) (November) 1994; Sergei Kiselyov, 'Ukraine: Not So Western After All,' *Bulletin of Atomic Scientists* 50 1993, p. 35; Gerhard Simon, 'Problems Facing the Formation of the Ukrainian State,' *Assenpolitik* 1 1994, p. 66; Eugene B. Rumer, 'Will Ukraine Return to Russia?' *Foreign Policy* 96 (Fall) 1994, pp. 135-138;

¹⁷⁶ This is based on 1995 estimates. *Nuclear Engineering* (April) 1996, p. 10.

¹⁷⁷ Kiselyov, pp. 32-35.

Russia rather than its troubled neighbour. Ukraine had two available options for dealing with this situation: it could either increase its societal power (by demonstrating its commitment to international norms), or it could use nuclear blackmail to extract cooperation and concessions from stronger states.¹⁷⁸ Ukraine's initial response following independence was to pursue the former strategy by declaring its intention to disarm unilaterally. However, when this failed to achieve the desired results, Ukraine resorted to the latter, using the nuclear issue as a political bargaining chip to extract both economic concessions and security guarantees.

This does explain a great deal of Ukraine's nuclear behaviour between 1992 and 1994. In the first half of 1992, nuclear bargaining tactics were employed at the regional level to extract cheap energy supplies from Russia and to enhance Ukraine's political leverage in the dispute over the Black Sea Fleet and Crimea. But by late 1992, Kravchuk was using the bargaining strategy at the global level, having been swayed by Kostenko's persuasive arguments in the Rada. During his speech at the World Forum in Davos in February 1993, Kravchuk outlined Ukraine's hardened stance on the nuclear issue. Pointing out that nuclear disarmament is not a priority for a country in economic crisis, Kravchuk stressed that Ukraine had a right to international aid and an 'indisputable right to demand from the nuclear powers guarantees of its national security' in return for dismantling the weapons on Ukrainian territory.¹⁷⁹ From this point onwards, Kravchuk declared that unilateral disarmament would be dependent on the provision of security guarantees and economic assistance by the West, and Russian compensation for the tactical nuclear warheads already transferred to Russia (this could take the form of hard currency, cheap energy supplies or cancellation of Ukrainian debts).

¹⁷⁸ Those that rely on the bargaining chip explanation of Ukraine's nuclear behaviour include: Bluth, p. 19; Gow, pp. 128-129; Steven E. Miller, 'Ukraine's Flawed Nuclear Diplomacy,' *The Non-proliferation Review* 1 (Spring-Summer) 1994, pp. 47-53; Pande, p. 235; Tymofyeyev, 'Internal Policy, International Security and Nuclear Weapons in Ukraine,' in Theodore A. Coulombis and Thanos P. Dokos (eds.), *Arms Control and Security in the Middle East and the CIS Republics*. (Athens: ELIAMEP, 1995), pp. 193-201.

¹⁷⁹ Sergei P. Galaka, 'Ukraine's Nuclear Dilemmas,' *Bulletin of Arms Control* (August) 1993, p. 17.

During the period of nuclear posturing, Ukraine's nuclear decisionmakers were sometimes accused of inconsistent and irrational behaviour. Although there was a general recognition that drastic measures were required to deal with Ukraine's dire economic situation, nuclear blackmail was considered to be a high risk strategy - one that threatened to reduce rather than improve the state's chances of survival. This appeared to undermine the rationality assumption on which all forms of neorealism are based - the assumption that states are sensitive to costs and therefore attempt to minimise risks and maximise security. For this reason, rational choice theories have sometimes been abandoned in favour of those that can explain Ukraine's seemingly irrational decisions, such as decision-making models.

However, structural realists would argue that Kiev was sensitive to costs, and that Ukraine's nuclear bargaining was rational. It could be argued that, between March 1992 and July 1993, Ukraine had little option but to play the nuclear card to acquire international assistance as, during this period, the nuclear weapons provided Kiev's only form of political leverage. When another method of increasing interaction became available, thanks to U.S. cooperation, Ukraine's political leaders tried to adopt it. This helps explain the decision to accede to NPT in December 1994, as it presented Ukraine with the opportunity to retain a high level of interaction without the same level of risk. By acceding to the NPT and promising to introduce a programme of liberal economic reforms, Ukraine could increase its societal capabilities and, by extension, its interaction capacity. This offers insight into the seemingly irrational decision to accept the vague security assurances and the offers of financial assistance that had previously been rejected. Accession brought with it the valuable chance to form societal links with the West, which, in the long run, would greatly improve Ukraine's chances of survival as an independent state.

This leaves two important questions unanswered. First, why did it take Ukraine's political leaders so long to switch from a high-risk to a lower-risk strategy? By July 1993, the Clinton administration was showing signs that it was sensitive to Ukraine's fears and needs, and was willing to provide financial

assistance in return for a commitment to nonproliferation and liberal economic reforms. Washington's new policy was far less Russo-centric and much more flexible, and to prove this, the original conditions that had been imposed on financial assistance were eased. Washington was offering Kiev a way out of its difficult predicament, so why was this opportunity not taken for another 18 months? Second, Kravchuk's nuclear diplomacy followed a dangerously inconsistent path during 1993-4. Kravchuk's behaviour following the Massandra Summit is a case in point: why did the president, who was apparently committed to his role as statesman, behave in a way that undermined his own reputation and the legitimacy of the state?

Structural realism could partly explain this behaviour using the concept of attributive power. It could be argued that the delays and inconsistencies were partly caused by Ukraine's weak executive - a characteristic of low attributive power. Although the most active role in decision-making on nuclear issues in Ukraine is played by the executive branch, its capacity to direct nuclear policy was severely constrained following independence.¹⁸⁰ For three years, the Rada as a whole defined Ukraine's stance on nuclear issues, rather than the president and the Foreign Ministry.¹⁸¹ Although Kravchuk and Zlenko responded to the Clinton Administration's more flexible approach to the nuclear issue in Summer 1993, showing their willingness to cooperate, the Rada - which was dominated by the communists and the military-industrial complex - remained solidly opposed to disarmament and market reform. This helps account for the delays and inconsistencies in Ukraine's nuclear diplomacy, as the executive and the Rada pursued different agendas.

However, the concept of attributive power does not offer a satisfying explanation of Ukraine's behaviour. If low attributive power was preventing Ukraine from cooperating over the nuclear issue between July 1993 and November 1994, then how can Ukraine's accession to the NPT be explained? Contrary to the theoretical expectations derived from structural

¹⁸⁰ Ibid.

¹⁸¹ Ibid., p.19.

realism, this U-turn did not coincide with a sudden improvement in Ukraine's internal situation. In November 1994, shortly before the Rada ratified the NPT, Ukraine remained divided along ethnic lines, social unrest was increasing as a result of the continuing economic crisis and energy shortages, and the domestic political structure of the state was unchanged. If anything, Ukraine's attributive power was declining. Why, in these circumstances, would Ukraine's parliamentary deputies agree to relinquish the country's precious bargaining leverage? The argument that Ukraine ratified the NPT to prove its commitment to international norms (and thereby increase its interaction capacity by less risky methods) is convincing on one level, but it cannot explain why this change in strategy occurred 18 months later than expected.

Structural realism cannot explain the timing of Ukraine's U-turn for two reasons. First, it abstracts from sub-state actors such as individuals and organisations, by treating the state as a unitary actor. Yet Ukraine's behaviour during this period can only be understood if the role of sub-state actors is taken into account. In particular, importance of the individual political abilities of the Ukrainian presidents should not be trivialised. Whereas the Kravchuk saw himself as an international statesman rather than a politician, had little time for the political wrangling of domestic politics, and lacked a solid base of support in the Rada, Kuchma was a skilled politician who surrounded himself with influential allies and, on becoming president, took steps to increase his own power and reduce that of the military. Kuchma therefore possessed the personal skills to influence the Rada and construct a new, shared identity for the state; Kravchuk did not. Second, structural realism can only identify causes based on an analysis of interests and physical capabilities, yet, to a great extent, Ukraine's nuclear behaviour was influenced by clashing beliefs and values. The worldview of the anti-Western communists was especially significant, as these conflicted with the ideas and values of the pro-Western executive. Only when Kuchma found a way of bridging this ideological divide by pursuing policies that were acceptable to both, was a resolution of the nuclear issue possible.

Chapter Seven: Conclusion

No one theory can ever be proven correct, but it is the debate between them that is important: truth is not an attribute of any one tradition, but of the dialogue between them.

Martin Wight¹

This chapter provides a final evaluation of structural realism as a theory of nuclear proliferation. It also asks whether a richer theoretical approach could be developed by supplementing structural realism with theories that derive explanations from additional sources. The first part addresses the ontological and epistemological issues raised in the introduction. It poses questions about the comparative validity of the sources used in the case studies and the relationship between theory and data. The second part assesses the extent to which the complex version of neorealism developed by Buzan, Jones and Little can build on the partial explanations offered by more parsimonious versions of the theory. It also analyses the theory's weaknesses, identifying the areas where structural realism failed to explain the case studies. The third part looks at additional explanations of nuclear proliferation, exploring the sub-state theories that also derive explanations from capabilities and interests, and the ideational approaches that are currently in their infancy within the discipline. This section evaluates these additional explanations in order to assess whether they can be used to complement structural realism to provide a richer understanding of nuclear dynamics. It also highlights the areas for further theoretical research on this subject.

Part I: Epistemological and ontological issues

The assumption that objective reality exists independently from our language and theories about it has underpinned this thesis. The question remains: has the evidence presented in each of the case studies resulted in the apprehension of this reality? What is the relationship between empirical data,

¹ Quoted in Steve Smith, 'The Self Image of a Discipline: A Genealogy of International Relations Theory,' in Ken Booth and Steve Smith (eds.), *International Relations Theory Today* (Cambridge: Cambridge University Press, 1995), p. 13.

theory and knowledge about nuclear weapons proliferation? These questions will be addressed in this section.

1. The question of uncertainty

The methodological problems associated with working in this area were raised in the introduction. For obvious reasons, official documents relating to nuclear policy are classified, and decisionmakers are unwilling to discuss sensitive issues of nuclear doctrine, motivations and intentions. Reliable primary sources of information are therefore scarce and difficult to obtain. Some theorists have argued that, for this reason, deductive - rather than inductive - methods should be used to explain proliferation dynamics. Did the case studies reinforce this argument? What were the strengths and weaknesses of the evidence presented in each case? What meaningful conclusions could be drawn from the available sources?

Contrary to expectations, in the cases of India and South Africa, access was gained to a wide range of primary sources. This was due to: 1) the release of relevant documentation from the 1960s by the United States, Russia and the UK; 2) the availability of official statements on nuclear policy by Indian and South African political leaders in the press, parliament and in international forums; and 3) the existence of published and unpublished accounts and memoirs by key nuclear decisionmakers in both countries. In addition, a large volume of reports and research by international and indigenous media, political commentators and strategic analysts was available for consultation. As a result, it was possible to compare sources, identify inconsistencies, and reach empirical conclusions on the basis of reasonably balanced evidence.

This is not to suggest that the conclusions reached were indisputable or constituted 'hard facts.' In an ideal world, the release of South Africa's official account of its nuclear weapons programme in 1993 would have provided a unique opportunity to build a solid base of concrete evidence. Here was a state that had developed a secret nuclear weapons programme, dismantled it, and was willing to make public its motivations,

intentions and strategic doctrine. At first sight, this might appear to be a gift for empiricists, but the sources revealed inconsistencies in the accounts of the different decisionmakers, raising questions about the reliability of the official account of South Africa's nuclear policy. This, combined with the scientific evidence unearthed by the IAEA, could indicate that Pretoria possessed a more ambitious nuclear programme than it has been willing to admit to. The evidence remains patchy, and all that can be asserted with any confidence is that *most* of the available evidence appears to reinforce de Klerk's version of events.

In India's case, some of the empirical analysis was based on U.S. intelligence reports on nuclear developments in China and Pakistan, due to the absence of equivalent indigenous documentation. According to the Department of State, India had access to these reports, but it is difficult to establish how much information was shared by the United States, how accurate U.S. sources were, or whether deliberately misleading information was supplied to New Delhi. It is therefore impossible to reach confident conclusions about the extent of India's knowledge concerning the nuclear capabilities of its adversaries, which calls into question explanations derived from physical capabilities. Furthermore, although the public statements made by India's political leaders give an indication of their threat perceptions, it is difficult to determine the extent to which such statements reflected genuine sentiments and the extent to which they were intended to manipulate domestic or international audiences. For these reasons, ambiguity will remain over empirical conclusions reached with the help of such sources.

In the cases of North Korea and Ukraine, meaningful evidence was much more difficult to obtain. In North Korea's case, all the available primary and secondary materials were of U.S. or South Korean origin, and most of these were heavily censored. As a result, it is impossible to reach confident conclusions about the nature and extent of North Korea's nuclear activities, and it is difficult to make balanced judgements about Pyongyang's intentions and motivations. To a great extent, despite efforts to remain sensitive to the potential partiality of the sources, the case study on North

Korea presents the nuclear issue through the eyes of North Korea's adversaries. This was also a problem with the sources relating to Ukraine, although in this case language constraints and the dearth of primary evidence, resulted in a greater reliance on Western secondary sources. The press reports, political commentaries, and academic research of U.S. and European origin tended to cast Ukraine in the role of an irrational pariah state, and there were few indigenous sources with which to counter these sentiments. Under these circumstances, it is particularly difficult to reach concrete conclusions, and unwise to make bold claims concerning the reliability of information and the apprehension of reality.

2. The relationship between theory, evidence, and knowledge

The difficulties of establishing whether or not reality has been grasped through the collection of data raises an important epistemological question: what claims can such a study make regarding contributions to knowledge? Although this philosophical question is crucial to all studies of nuclear policy and behaviour, it is rarely directly addressed in the literature. There may be a simple explanation for this lack of attention to epistemological issues. Given that the majority of theorists involved in the debate over proliferation causes have taken a positivist approach, there is a great incentive for such scholars to avoid the issue. Any attempt to grapple with questions of epistemology would expose the conflict between positivist claims to certainty and the absence of concrete empirical evidence to support such claims. One of the consequences of this tension has been the tendency amongst positivists to conflate their ontological and theoretical assumptions. In the absence of hard facts to justify positivist arguments, certain concepts have been reified. Abstract notions, such as the structure of the international system, have been presented as real constructs rather than conceptual tools. Unfortunately, this has stagnated theoretical progress.

Theories should be revised if, on the basis of new information, they are found to be seriously flawed. One of the contributions of this thesis is that it exposes the weaknesses of parsimonious neorealism as a theory of

nuclear proliferation, and gives an indication of how it can be strengthened. It shows that the notion of polarity offers little insight into the nuclear activities of each of the four states, which calls into question Waltz's assertion that the most parsimonious theories are the strongest. Indeed, the case studies suggest that the opposite is the case - the more complex the theory, the more leverage it possesses. The theoretical analysis of each of the case studies found that structural realism offers another way of understanding proliferation dynamics, which is not necessarily the right - or only - way to understand it. It also found that, when neorealism is adapted by adding variables, its explanatory leverage increases without collapsing into thick description. This is important, because it indicates that, even where evidence is limited, it is possible to make judgements about the strengths and weaknesses of competing theories.

Part II: Structural realism as a theory of nuclear proliferation

No theory can ever be expected to explain everything about a given phenomenon - there will always be exceptions to the rule. Often, particularly when decisionmakers are faced with information that is unreliable or incomplete, policy decisions are taken on an *ad hoc* basis. As a result, no attempt to force behaviour into the constraints of a theoretical framework will ever provide perfect explanations or accurate predictions. However, this does not invalidate the process of identifying the areas where there is a good or bad fit between the theory and the empirical record. It is through locating these strengths and weaknesses that theoretical advances can be made and deeper levels of understanding can be reached.

1. The strength of structural realist explanations

At the root of all neorealist explanations of international outcomes is the assumption that the primary goal of all states is to survive. According to neorealists, the quest for security and power therefore underlie all decisions to go nuclear. Structural realism does not expand this short list of motivations, but this thesis has shown that it can provide a richer analysis of proliferation

causes than parsimonious neorealism or balance of power theory. There are two reasons for this. First, structural realism derives predictions and explanations from unit level attributes as well as the distribution of power across the system. This leads to a more inclusive picture of the conditions that have generated proliferation pressures in the four states in question. Second, the concept of power is disaggregated, to include military, political and economic power. As a result, the sources of power and insecurity are expanded, leading to a more convincing picture of the motivational factors that have driven proliferation decisions, especially since the end of the Cold War.

i. The concept of attributive power

The case studies revealed that structural realism offers a convincing explanation of outcomes that less complex versions of neorealism cannot explain. For example, the empirical record indicated that all four states preferred to balance externally against nuclear and conventional threats, and yet they resorted to developing - or in Ukraine's case, retaining - independent nuclear capabilities. Neither parsimonious neorealism nor balance of power theory could have predicted or explained this behaviour. In fact, Waltz's version of neorealism proved to be misleading where India and South Africa were concerned, as the structural dynamics that are assumed to be generated by bipolarity failed to result in the expected provision of nuclear umbrellas by the superpowers. This thesis has shown that structural realism is able to offer some insight into this outcome because, unlike competing versions of neorealism, it brings the state into the analysis. According to structural realist theory, all four states were unable to acquire nuclear umbrellas because they suffered from internal instability due to ethnic divisions, and a lack of territorial integrity and/or political legitimacy. As a result, they were considered to be unattractive allies and were therefore forced to balance internally against threats.

ii. The concept of interaction capacity.

Structural realism posits that low attributive power causes low interaction capacity, which is one of the crucial drivers of nuclear proliferation. States that are isolated or alienated due to their internal attributes are likely to suffer intense insecurity, and to seek nuclear weapons to increase their interaction capacity. The case studies showed that India, South Africa, North Korea and Ukraine all sought nuclear weapons for this reason, because they lacked alternative means to increase their interaction.

This causal relationship could equally be applied to explain the behaviour of the NWS, the NNWS and additional nuclear proliferants and aspirants not covered in this thesis. In the cases of the NWS that are well integrated into the international system (United States, Russia, France and the UK) nuclear disarmament is likely to move forward. In China's case, lower levels of interaction will prevent movement towards disarmament, reinforcing proliferation dynamics. Nuclear proliferation is unlikely to occur amongst the NNWS that enjoy high interaction capacity, unless they become isolated. However, poorly integrated and alienated signatories and non-signatories of the NPT, are likely to continue their nuclear weapons programmes overtly or covertly, and are unlikely to relinquish their nuclear capabilities until alternative means of increasing their interaction capacity emerge. These dynamics are represented in Figure 1.

	High interaction Capacity	Low interaction capacity
High level of relational power	Integration. Movement towards nuclear disarmament. (U.S., Russia, UK and France)	Low levels of integration. Low integration. Expansion of nuclear weapons capabilities (China)
Low level of relational power	Integration. Nuclear nonproliferation. (NNWS – including rollback states)	Isolation/alienation. Nuclear proliferation. (India, Pakistan, Iraq, North Korea, Iran)

Figure 1.

iii. The disaggregated concept of power

The case studies also showed that, although military threats triggered initial proliferation decisions, subsequent nuclear behaviour was determined as much by political and economic considerations as it was by strategic goals. India's desire for international recognition and diplomatic leverage became the principal driving force behind its nuclear decisionmaking from the early 1970s. The pursuit of political and economic leverage influenced both North Korea and Ukraine's nuclear activities. Nuclear weapons capabilities were valued not so much for their strategic utility or deterrent value, but for the precious bargaining power that they provided, allowing states to 'punch above their weight' on the international stage. Structural realism is the only version of neorealism that can provide a convincing explanation for this phenomenon, by placing nuclear policy within the broader context of each country's foreign policy goals rather than its narrow strategic interests.

This thesis has also shown that, due to its disaggregated concept of power and expanded definition of interests, complex neorealism can also offer an explanation for nuclear rollback. Theorists who derived predictions from the concept of polarity argued that the shift from a bipolar to a multipolar system would increase proliferation pressures, leading to a spate of new proliferants at the end of the Cold War. However, both Ukraine and South Africa have renounced nuclear weapons, and North Korea agreed to freeze its nuclear weapons programme, undermining these expectations. Although balance of power theory was able to offer some insight into these rollback decisions, these were limited to military explanations, which could not explain Ukraine's policy reversal, or North Korea's cooperation. In contrast, structural realism could account for the political and economic drivers of nonproliferation. According to this theory, states are risk averse - they are sensitive to military, political and economic costs. They will only develop nuclear weapons to achieve their foreign policy goals if alternative policy options are not available. If a less risky method of pursuing their multiple interests arises, it is inevitable that this will be taken up. This can explain Ukraine's decision to ratify the NPT and North Korea's decision to sign the

Framework Agreement, and can provide some insight into South Africa's monumental U-turn.

2. The weaknesses in structural realist explanations

The case studies exposed a number of problems with structural realist explanations of nuclear proliferation. First, they exposed a number of incidents when the states concerned failed to take action to further their national interests. Second, they showed that the motivations for acquiring or retaining nuclear capabilities have changed as a result of changing perceptions of nuclear weapons. Third, they suggested that cultural variables have sometimes influenced proliferation decisions. Lastly, they identified occasions when domestic political factors acted as a direct - rather than an indirect - cause of nuclear proliferation. Structural realism was unable to account for each of these developments.

i. The role of sub-state actors

Structural realism suffered from empirical weaknesses demonstrated by the fact that, on a number of significant occasions, expected behaviour did not occur. The actions taken by the states in question sometimes appeared to undermine the national interest, which suggests that either a) nuclear policy was not interest-driven (a point which will be explained below) or b) nuclear policy was influenced by the conflicting interests of sub-state actors. For example, Ukraine's decision to ratify the NPT came 18 months after the United States had offered financial assistance and security assurances in return for cooperation over the nuclear issue. Structural realism could not explain this delay. India has moved further up the proliferation ladder and expressed its intention to weaponise, despite mounting economic and political pressure to join the NPT. Structural realism could not explain this decision, as India would be strategically and economically more secure if New Delhi dropped its adversarial approach, particularly after the ICJ ruling on the security assurances pledged by the NWS. It seems that India has placed prestige considerations above all others, irrespective of the potential costs.

These decisions undermine the assumption that the state is a rational, unitary actor - the primary assumption on which all versions of neorealism, however complex, are founded.

ii. The evolution of ideas

The case studies also revealed that economic and political motivations for acquiring nuclear weapons are beginning to overshadow traditional military drivers. Although structural realism provides a broader theoretical framework that allows for multiple goals and a multi-level analysis, it cannot explain *why* this shift has taken place. The argument that low attributive power and low interaction capacity forces states to resort to using nuclear weapons as a diplomatic tool to compensate for political and economic weaknesses is convincing up to a point, but what is needed is an explanation for why states have been able to use nuclear weapons - or the threat of developing nuclear arsenals - to obtain economic and political concessions from more powerful states. Developments in nuclear doctrine and motivational factors suggest that ideas about the function and legitimacy of nuclear weapons have been changing, both within the nuclear aspirants and elsewhere. Recent developments in Ukraine and North Korea have shown that states are able to use nuclear weapons as bargaining chips because other states wish to prevent their spread, and are willing to exchange military, political and economic concessions in return for nonproliferation pledges. States with low attributive power would not be able to compensate for their weaknesses through the use of nuclear bargaining chips if the nonproliferation norm did not exist. However, because it derives predictions and explanations from the physical capabilities of states (attributive and relational) and excludes ideational forces, structural realism also excludes normative arguments.

iii. The importance of culture and identity

Third, the case studies showed that, although the principal goal of all four states was to survive, each state wanted to survive in its own way, ideologically and materially. How each state chose to define threats, costs

and interests differed from one state to the next, depending the ideas and beliefs of decisionmakers and on the collective expectations of each society. To a certain extent, cultural variables determined nuclear policy. In India's case, the shared experience of colonial exploitation and the widespread belief in equality as the guiding principal in international politics influenced ideas about nuclear weapons and the NPT. In Ukraine's case, the horrific disaster at Chernobyl promoted ambivalence towards nuclear weapons. Rather than as a symbol of political prestige, nuclear weapons were seen as a necessary evil to be disposed of when the right conditions were met. In India, the nuclear issue became tied to the notion of national identity. By standing up to the NWS and exposing the hypocrisy of the NPT, India could reinforce its role as a technologically capable leader of the oppressed. Similarly, in North Korea, the nuclear issue has been tied to the issue of self-reliance and the rejection of Western standards and values. Although cooperation over the nuclear issue under crisis conditions is possible in both states, rollback is unlikely while New Delhi's and Pyongyang's political leaders continue to link the nuclear issue to the emotive issue of national pride and identity. This dimension of nuclear behaviour cannot be explained using structural realism, as culture is based on customs and beliefs rather than on interests and material capabilities.

iv. Domestic political wrangling

Whereas structural realism identifies domestic political factors as a remote cause of nuclear proliferation, the empirical record indicates that, on occasion, internal political concerns have been a direct proliferation trigger. According to structural realist theory, the unit attributes of a state (such as territorial integrity and socio-political cohesion) create the conditions that make a state more or less susceptible to external proliferation pressures - low levels of attributive power intensify external threat perceptions and insecurity. However, although the inclusion of the unit level increases the leverage of the theory, it continues to privilege external drivers and, in doing so, underplays the role of domestic politics. There have been occasions when internal

political crises appear to have triggered important steps up or down the proliferation ladder. For example, in India's case in 1974, the decision to go ahead with the PNE, despite improvements in India's strategic position, appears to have been motivated by the desire of the Gandhi administration to rally support for the Congress government after successive years of drought, social unrest and political corruption. It would be impossible to construct a systemic theory that could give sufficient weight to this cause. Even when levels of analysis are combined into one theory, one level must be privileged over the other to avoid theoretical confusion. This suggests that structural realism should be combined with a theory that derives predictions and explanations primarily from the unit level if the dynamics of proliferation are to be understood.

Part III: Complementary explanations of nuclear proliferation

Additional explanations of nuclear proliferation can be roughly divided into two different approaches: sub-state material and ideational. Both delve beyond the state for explanations of nuclear proliferation: the first explores the role of self-interested individuals and organisations; the second explores the role of beliefs and norms. Although both approaches are dependent on systemic explanations in one way or another, and therefore do not represent stand-alone theoretical alternatives, they each make important contributions to our understanding of proliferation dynamics, complementing, rather than replacing, neorealism. This section evaluates these approaches.

1. Sub-state material approaches

The first category of theories does not break significantly with the assumptions on which neorealism is based. They are primarily concerned with power, interests, and survival under anarchy, but whereas neorealism privileges the state as the primary actor in the international system, the theories in question focus on the role of individuals and organisations. These theories aim to show the referent object of security is often the individual, organisation or regime rather than the state as a whole, and as a result,

decisions that undermine the national interest are sometimes taken. This explains the seemingly irrational behaviour that systemic theories fail to explain.

i. Organisation theory

Organisation theory focuses on decisionmaking, specifically on the role played by self-interested organisations in the decisionmaking process. The theory evolved from the same tradition as the bureaucratic politics model of decisionmaking, but whereas the latter is more suited to explaining low salience policy decisions which are decided by bureaucracies, organisation theory is more suited to explaining nuclear policy decisions, which are usually taken by small decisionmaking elites.² According to this theory, international leaders intend to behave rationally, but nuclear policies are often influenced by powerful domestic organisations and groups, whose interests often conflict with those of the state. As a result, the narrow, parochial interests of the group - rather than the state - sometimes drive nuclear decisionmaking, which accounts for decisions that appear counterproductive or even irrational.³

² Graham Allison introduced his 'Model III' to the discipline over 20 years ago, to explain seemingly irrational state behaviour. He denied the unitary character of state policy-making and argued that state actions were the consequence of bargaining between self-interested intrastate actors. Model III reasoned that 'players in positions' adopt stands and agendas based on 'parochial priorities and perceptions;' policy outcomes reflect these parochial concerns, the players' relative power, the nature of 'action channels' (institutionalised procedures for facilitating or implementing governmental decisions) and the 'rules of the game.' Graham Allison, *Essence of Decision: Explaining the Cuban Missile Crisis* (Boston: Little, Brown, 1971), p. 144.

³ Scott Sagan uses organisation theory to explain the consequences - as opposed to the causes - of nuclear proliferation in *The Spread of Nuclear Weapons: A Debate*. Like Waltz, Sagan's main concern has been to understand the impact of nuclear weapons on international peace and stability, but unlike Waltz, Sagan reaches the conclusion that nuclear weapons are likely to destabilise the world, with catastrophic consequences. He argues that this occurs because organisations often become fixated on narrow operational measurements of goals and lose sight of their overall objectives. These arguments are based on more comprehensive earlier research in which Sagan focused specifically on the role that the U.S. military plays in controlling nuclear weapons. He revealed that safety measures intended to prevent nuclear accidents have, on occasion, failed, and argued that these incidents had been covered-up by military leaders wishing to promote the reputation of their command. Scott Sagan, 'More Will Be Worse,' in Sagan and Waltz, *op. cit.*, pp. 49-53; Scott Sagan, *The Limits of Safety: Organizations, Accidents and Nuclear Weapons* (Princeton, NJ: Princeton University Press, 1993), pp. 251-262.

However, although Sagan believes this approach can provide a convincing explanation of the consequences of the spread of nuclear weapons, he does not think it can shed much light on proliferation causes. As far as Sagan is concerned, 'the largest number of past and even current active proliferant cases are best explained by the security model.' He believes that alternative approaches suffer from fundamental weaknesses that undermine the validity of their criticism of systemic theories of nuclear proliferation. Whereas neorealists and neoliberals argue that insecurity and/or the quest for power drives nuclear decisionmaking, and can provide a logical explanation of why this is the case, most proponents of decisionmaking approaches either fail to explain why certain organisations or coalitions become powerful enough to influence nuclear decisionmaking, or they fall back on the security model to explain why certain organisations and coalitions form and gain acceptance. In other words, organisation theory needs to be tied to a systems theory in order to explain proliferation dynamics, it cannot stand alone. Sagan had originally hoped to use organisation theory to explain the causes of nuclear proliferation, but abandoned the project when he decided that domestic political approaches are not suited to the task. Scott Sagan, 'Why Do States Build Nuclear Weapons? Three Models in Search of a Bomb,' *International Security* 28 (Winter) 1997, p. 40. Interview with Scott Sagan, Stanford, California, 6 December 1996.

This approach gives much more emphasis to the domestic political drivers of nuclear proliferation. It can help explain India's decision to go-ahead with the PNE in May 1974, despite concerns over the strategic and economic consequences. At the time, the Congress government was losing support, and was more interested in promoting its own interests than those of the state as a whole. This also sheds light on Vajpayee's decision to conduct nuclear tests in May 1998, as the BJP was unable to pursue its own agenda within the weak coalition government, and may have hoped that the tests would strengthen its position. Organisation theory may also help explain Ukraine's delayed decision to join the NPT. Although Kravchuk was in favour of cooperating with the West over the nuclear issue, his plans ran into conflict with the interests of the military-industrial complex and the communists in the Rada. To retain his grip on power, Kravchuk was forced compromise with these powerful domestic organisations, and refused to bow to U.S. pressure even after the United States offered Kiev financial assistance and security assurances. A similar situation occurred in North Korea between 1992 and 1994, when the powerful 'old guard' of conservatives, made-up of members of the armed forces and the military-industrial complex, influenced the Kims' nuclear decisionmaking.⁴ The military also played a crucial role in South Africa's nuclear decisionmaking under Botha's premiership. The decision to explore the possibility of developing thermonuclear weapons and miniaturised devices may have been driven by the parochial interests of Armscor. This behaviour may not seem rational from the national perspective, but when the interests of competing organisations are taken into account, it can be understood.⁵

⁴ The conservatives emphasised the need for Pyongyang to develop its nuclear capability as the last card necessary to ensure North Korea's survival, and opposed any form of political or economic cooperation with Washington, Tokyo or Seoul. From 1992 to 1994 this group had a stronger influence over policy than the pragmatists in the KWP, who were urging Kim Il Sung to normalise relations with the West through cooperation over the nuclear issue with the IAEA. Alexandre Y. Mansourov, *North Korean Decision Making Processes Regarding the Nuclear Issue* (Berkeley, CA: Nautilus Institute, 1994), pp. 2-4; Harrison (1994), p. 18.

⁵ Social constructivists have also made an explicit attempt to move away from systemic explanations of nuclear proliferation. They also examine the process of proliferation from the perspective of a wide variety of interacting sub-state groups, rather than elite decisionmakers and their politically and strategically motivated decisions. According to this school of thought, weapon systems emerge as a result of a complex process of conflict and collaboration between a range of social actors, including scientists, corporate bosses, military leaders, and the organisations they head. Steven Flank has developed his own version of this theory, which he has called the social construction of technology (SCOT). Using his more sophisticated version of the technological imperative, Flank shows how technology can influence nuclear decisionmaking by expanding or restricting the nuclear options available and altering other actors' conceptions about their adversaries. He has shown that SCOT theory can help explain why:

ii. The myth maker model

Whereas organisation theory locates causes at the level of the organisation, Peter Lavoy's mythmaker model theory locates explanations at the level of the individual. Lavoy argues that states develop nuclear weapons because influential individuals - who want the state to develop nuclear weapons in order to fulfil their own personal ambitions - emphasise the country's security problems and the political and military strength that nuclear weapons will provide, creating the nuclear myth.⁶ Over a period of time, enough key individuals within the government will be persuaded that the state needs nuclear weapons, and a decision will be taken to begin a nuclear weapons programme. According to Lavoy, this model can also explain the causes of nuclear rollback. He argues that the myth is likely to be perpetuated until a well placed and talented individual undermines it by spreading the myth of nuclear insecurity.⁷

Lavoy uses the example of Homi Bhabha's role as a mythmaker in India to illustrate his argument, although the case studies have shown that significant individuals in South Africa, North Korea and Ukraine could equally have been chosen. In India's case, Bhabha loudly lobbied for the

certain forms of technology were adopted over others and the timing of nuclear development in specific states. In particular, he argues that India's nuclear development should be divided into three overlapping stages: the system-building stage (1947-1962), during which time the core organisations within the nuclear establishment were constructed; the development alliances stage (1950s to the 1970s), during which time the nuclear establishment attempted to form alliances with industry; and the defence alliance stage (1970s onwards), during which time India's nuclear scientists became increasingly involved with military-security projects. However, this approach does not represent a major advance on organisation theory - it expands the number of actors involved in the proliferation process, but it continues to derive explanations from the material self-interest of the groups involved. Steven Flank, 'Exploding the Black Box: The Historical Sociology of Nuclear Proliferation,' *Security Studies* 3 (Winter) 1993-1994; Donald MacKenzie, *Inventing Accuracy: A Historical Sociology of Nuclear Missile Guidance* (Cambridge, MA: MIT Press, 1990).

⁶ Lavoy describes beliefs about nuclear weapons as myths due to the lack of objective information about the relationship between nuclear weapons and war. Beliefs about nuclear weapons are therefore based on 'logic and faith' rather than facts. Lavoy (1993), pp. 199-200.

⁷ In common with organisation theory, the mythmaker model cannot explain the causes of nuclear proliferation without help from systems theory. In order to create a stand alone theory, Lavoy would have to prove two things. Firstly, he would have to show that nuclear decisionmaking is driven by the nuclear myth, and not by genuine security concerns. Secondly, he would have to show that a state would not have begun its weapons programme if it had not been for its principal mythmaker. Both of these tasks are exceptionally difficult to achieve as, ultimately, Lavoy is forced to fall back on international pressures and the security imperative to explain why influential individuals are able to create the myth in the first place. In India's case, it seems likely that the myth grew because it was believable, and it was believable because New Delhi was experiencing tense relations with its nuclear adversary, Beijing. China had already displayed its nuclear capability by the time Shastri agreed to the peaceful nuclear explosion (PNE) programme, and this posed a very real threat. It is therefore fair to argue that Lavoy's approach can help explain the crucial role of individuals in the proliferation process and in doing so can enrich our understanding of the phenomenon. However, it would be inaccurate to describe the mythmaker model as an alternative theory of nuclear proliferation because it relies implicitly on systemic explanations.

Despite his earlier optimism that an operation alternative to neorealism could be developed, Lavoy now acknowledges that his model cannot stand in isolation from neorealist explanations, and has resigned himself to 'nesting' his model within the broader theoretical framework provided by neorealism. Interview with Peter Lavoy, Naval Postgraduate School, Monterey, California, 3 December 1996.

development of a nuclear weapons capability, claiming that a bomb could be developed within 18 months and that an arsenal of 50 bombs would cost less than \$21 million. Bhabha was so persuasive, that he eventually managed to persuade Shastri - an ardent opponent of nuclear weapons - to agree to create a classified project to develop an ability to detonate a nuclear bomb.⁸ In South Africa's case, Botha was the principal mythmaker. He was convinced that apartheid South Africa could only survive if it acquired the ultimate weapon. As Defence Minister from 1965 to 1978 and Prime Minister from 1978 to 1989, Botha was in the ideal position to promote this myth, and did so so successfully that the myth became institutionalised until it was overturned by de Klerk. In North Korea's case it was Kim Il Sung who assumed the role of mythmaker. The North Korean leader had been hugely impressed by the devastation caused by the U.S. nuclear attacks on Hiroshima and Nagasaki. He was convinced that nuclear weapons were the ultimate symbol of power and independence. Ukraine's principal mythmaker appears to have been Kostenko, whose publications in the parliamentary daily, *Holos Ukrainy*, were largely responsible for the pro-nuclear position of parliament from 1992 to 1994.

Organisation theory and the mythmaker model further our understanding of proliferation dynamics by providing 'first image' explanations. By delving beneath the level of the state, they show who defines interests and how they are formed. As a result, they can explain behaviour that appears to conflict with the national interest, and shed light on the timing of important proliferation decisions. This does represent an important contribution to the proliferation debate, but the insight that these approaches can offer is limited by the theoretical assumptions on which they are based. Both organisation theory and the mythmaker model derive explanations from classical realist assumptions about human nature - the idea that all human beings and organisations are self-interested and are driven by a basic desire for power. As a result, they cannot explain why some individuals and organisations become more influential than others, or why

⁸ Ibid., p. 199-202.

some outcomes cannot be explained or predicted by analysing interests. In order to do this, they must either look to the pressures created by the international system, or to the influence of culture and norms for answers.

2. Ideational approaches

The contention that ideas matter in the conduct of international politics is both understudied and undertheorised. There are good reasons for this, as ideas constitute a notoriously elusive subject for social scientific inquiry. However, it may be that it is in this realm, rather than in the realm of materialism that some important insights into proliferation dynamics lie. As with material approaches, ideational explanations of international politics can be divided into three levels of analysis: individual beliefs, national beliefs (culture and identity) and transnational beliefs (causal beliefs and norms). This section searches each level for alternative explanations of nuclear proliferation.

i. Individual beliefs

A large literature exists in international relations, exploring the role that cognition plays in international politics.⁹ Cognition refers to peoples interpretations of their environment and their beliefs that develop as a result of their experiences. These beliefs are sometimes referred to as operational code, *Weltanschauung* or cognitive map but, essentially, the terms all refer to the same phenomenon - a political leader's beliefs about the nature of politics and conflict, their beliefs regarding the extent to which historical developments can be shaped, and their notions of correct strategy and tactics.¹⁰ According to proponents of this approach, all foreign policy decisions can be reduced down to the level of the individual decisionmaker, even to the

⁹ Examples of recent additions to this literature include: Matthew G. Bonham, 'Cognitive Mapping as a Technique for Supporting International Negotiation,' *Theory and Decision* 34 1993, pp. 255-273; Judith Goldstein and Robert O. Keohane, *Ideas and Foreign Policy: Beliefs, Institutions, and Political Change* (Ithaca: Cornell University Press, 1993); Karen Gutteri, Michael D. Wallace and Peter Suedfeld, 'The Integrative Complexity of American Decisionmakers in the Cuban Missile Crisis,' *Journal of Conflict Resolution* 39 1995; Richard K. Herrmann and Michael Fischerkeller, 'Beyond the Enemy Image Spiral Model: Cognitive Strategic Research after the Cold War,' *International Organization* 49 1995; Richard K. Herrmann, James F. Voss, Tanya E. Schooler and Joseph Ciarrochi, 'Images in International Relations: An Experimental Test of Cognitive Schemata,' *International Studies Quarterly* 41 1997.

¹⁰ Michael D. Young and Mark Schafer, 'Is There Method in Our Madness? Ways of Assessing Cognition in International Relations,' *Mershon International Studies Review* 42 1998, p. 69.

extent that future predictions of foreign policy behaviour can be made on the basis of observed patterns in thinking.¹¹

In the field of nuclear proliferation, this approach is largely unexplored and therefore highly experimental. It is, however, sometimes touched upon to explain the seemingly irrational nuclear decisions taken by political leaders.¹² The most well known of the cognitive approaches to understanding nuclear proliferation is belief-systems analysis.¹³ According to this theory, there are three main reasons why irrational behaviour occurs. Firstly, during crisis situations when decisionmakers are subjected to extreme pressure and tension, they apply simplified images of reality, which are highly resistant to change, and often ignore information that contradicts their beliefs.¹⁴ Secondly, decisionmakers have a tendency to presume that others share their own world view, and therefore are not always aware of the impact that their decisions might have.¹⁵ Thirdly, because decisionmakers' understanding of others' behaviour is shaped by their own beliefs, this sometimes leads them to misinterpret the signals they receive from others, leading to unexpected behaviour.¹⁶

This approach also provides a useful insight into why decisions by political leaders sometimes conflict with the national interest. It also reinforces the arguments of those who believe that the spread of nuclear weapons could have catastrophic consequences, because political leaders are inclined to make irrational choices during crisis situations.¹⁷ However, the insight that it provides into proliferation causes is limited for two reasons. First, it presents serious methodological problems for the analyst. It extremely

¹¹ Ibid.

¹² It has also been used to explain negotiations over the Limited Test-Ban Agreement in Matthew G. Bonham, Victor M. Sergeev, and Pavel Parshin, 'The Limited Test-Ban Agreement: Emergence of New Knowledge Structures in International Negotiation,' *International Studies Quarterly* 41 1997, pp. 215-240.

¹³ The concept of belief systems was first introduced into international relations theory by Ole Holsti. Steve Smith provides a good introduction to beliefs systems in general, and to Holsti's work in particular, in his chapter 'Belief Systems and the Study of International Relations,' in Richard Little and Steve Smith (eds.), *Belief Systems and International Relations* (Oxford: Blackwell, 1988).

¹⁴ Janice Gross Stein, 'International Negotiation: A Multidisciplinary Perspective,' *Negotiation Journal* (July) 1988, pp. 221-230; Ole Holsti, 'Crisis Decisionmaking' in Philip E. Tetlock (ed.), *Behaviour, Society and Nuclear War*, volume 1 (New York: Oxford University Press, 1989); Jean Lave, *Cognition in Practice* (Cambridge: Cambridge University Press, 1988).

¹⁵ Robert Jervis, *Perception and Misperception in International Politics* (Princeton, NJ: Princeton University Press, 1976).

¹⁶ Glenn Snyder and Paul Diesing, *Conflict Among Nations* (Princeton, NJ: Princeton University Press, 1977).

¹⁷ Philip E. Tetlock, Charles B. McGuire and Gregory Mitchell, 'Psychological Perspectives on Nuclear Deterrence,' *American Review of Psychology* 42 1991, p. 257.

difficult, if not impossible, to establish the beliefs of individuals, particularly on the sensitive subject of nuclear weapons. The information available is scarce, the comments made by decisionmakers are often ambiguous, conflicting, or deliberately misleading. Ideally, political leaders should be brought into a controlled laboratory environment where they would have to answer a battery of tests - including lie-detector tests - and engage in numerous experiments to elicit the necessary information. Unfortunately, such an approach is unfeasible. Second, although it would be helpful to understand the beliefs of individual decisionmakers - particularly in instances where rational actor models fail to explain behaviour - such an approach cannot explain why groups have adopted similar or identical beliefs about the nuclear issue, or why such ideas have changed.

ii. Transnational beliefs and norms

An approach that examines collective beliefs about nuclear weapons, and explains how and why these form, may shed more light on proliferation causes. It is helpful to separate transnational ideas into two different categories: causal beliefs and principled beliefs or norms. Ideas about nuclear weapons fall into both categories, although the historical record shows that there has been a shift in emphasis from the first to the second over the past 50 years. From the 1940s to the early 1960s nuclear weapons were seen in an almost exclusively positive light by academics and policy makers alike. They were seen as symbols of power and modernity, and as instruments that could be used to maintain stability through deterrence. However, as time past, information concerning the possibility of irrational behaviour, nuclear accidents and the hazardous environmental implications of nuclear proliferation began to change perceptions. By 1968 the nonproliferation norm was institutionalised in the form of the NPT, and was challenging notions of nuclear stability and prestige.¹⁸

¹⁸ The Debate over how perceptions of nuclear weapons have changed is covered in Gregg Herkin, *The Winning Weapon* (New York: Vintage, 1982); Robert Frank Futrell, *Ideas, Concepts and Doctrine: A History of Basic Thinking in the United States Airforce, 1907-1964* (Maxwell Air Force Base, Alabama: Air University, 1971); Eric Herring, 'The Decline of Nuclear Diplomacy,' in Ken Booth (ed.), *New Thinking About Strategy and International Security* (London: Harper Collins, 1991); and Sagan (1997).

Knowledge of these conflicting ideas about nuclear weapons provides insight into proliferation dynamics. It helps explain why nuclear weapons were initially valued primarily for their strategic utility and political prestige, and later, as the nonproliferation norm emerged, for their economic and political leverage. This sheds light on the evolution of nuclear doctrine, particularly in South Africa, North Korea and Ukraine, where decisionmakers were able to take advantage of widespread fears of proliferation to achieve their foreign policy goals. As ideas about nuclear weapons have changed, so have the motivations for acquiring them or renouncing them. This approach would allow for a more evolutionary understanding of nuclear proliferation, rather than the more static, cyclical explanations offered by material approaches.

Although there have been important contributions to the literature on ethics and law concerning the use of nuclear weapons, little attention has been paid to nuclear symbolism and the development of international norms concerning the acquisition of nuclear weapons.¹⁹ Elsewhere in the international relations literature, ideational approaches have been adopted to explain the spread of anti-colonialism, the abolition of the slave trade and the constraints against the *use* of nuclear and chemical weapons.²⁰ This has led to a valuable debate about the role of ideas and global norms, but it has not resulted in a well-developed theory about their causal influence. As a result, there are no ideational theories that can help explain the dynamics of nuclear proliferation, only contentions and informal models. Edward Rhodes' idea-driven model attempted to fill this gap, but, although his model showed promise, he failed to define his assumptions and,

¹⁹ Joseph S. Nye, Jr., *Nuclear Ethics* (New York: Free Press, 1986); Steven P. Lee, *Morality, Prudence, and Nuclear Weapons* (New York: Cambridge University Press, 1993); Nicholas Rostow, 'The World Health Organisation, the International Court of Justice, and Nuclear Weapons,' *Yale Journal of International Law*, 20 (Winter) 1995.

Notable exceptions include: Robert Jervis, 'The Symbolic Nature of Nuclear Politics,' in Robert Jervis, *The Meaning of the Nuclear Revolution* (Ithaca, NY: Cornell University Press, 1989); Harald Muller, 'Maintaining Non-Nuclear Weapon Status,' in Regina Cowen Karp (ed.), *Security With Nuclear Weapons?* (New York: Oxford University Press, 1991).

²⁰ Robert H. Jackson, 'The Weight of Ideas in Decolonization: Normative Change in International Relations,' in Judith Goldstein and Robert O. Keohane (eds.), *Ideas and Foreign Policy* (Ithaca, NY: Cornell University Press, 1993); Ethan A. Nadelmann, 'Global Prohibition Regimes: The Evolution of Norms in International Society,' *International Organization* 44 (Autumn) 1990; Richard Price, 'A Genealogy of the Chemical Weapons Taboo,' *International Organization* 49 (Winter) 1995; and Richard Price and Nina Tannenwald, 'Norms and Deterrence: The Nuclear and Chemical Weapons Taboos,' in Peter J. Katzenstein (ed.), *The Culture of National Security: Norms and Identity in World Politics* (New York: Columbia University Press, 1996).

consequently, his model is not operational.²¹ What is needed is a theory that can explain: how and why beliefs about nuclear weapons have evolved; the relationship between norms, information and learning; the process through which beliefs and norms spread from individual to individual and state to state; and the process through which these beliefs are translated into nuclear policy.²² Until an operational ideational theory is developed, such approaches will always be overshadowed by the power and security imperatives.

iii. National beliefs and customs

Although knowledge of individual beliefs and transnational ideas and norms can help explain certain aspects of nuclear behaviour, it would also be helpful to understand why states accept or reject these ideas. The answer may lie in realm of national identities and in the relationship between identities and ideas about nuclear weapons.²³ For example, in India's case, the identity of the state was being shaped at a time when nuclear weapons were regarded

²¹ Edward Rhodes developed his ideas driven model to show that state behaviour is sometimes idea-driven rather than interest-driven as Graham Allison had contended. He chose the subject of naval force posture to illustrate his point - a policy issue concerned with navy budgets, procurement, and force mix - arguing that policy outcomes were determined by 'the dominance of certain sets of ideas rather than the dominance of particular interest groups.' However, unfortunately, having made this interesting empirical observation, Rhodes did not attempt to develop a formal model. Edward Rhodes, 'Do Bureaucratic Politics Matter? Some Disconfirming Findings from the Case of the U.S. Navy,' *World Politics* 47 (October) 1994, pp. 1-41.

²² There is a growing volume of international relations literature devoted to exploring each of these questions individually, although so far, none of them have attempted to develop a theory and few of them have focused on the proliferation question. For example, the relationship between beliefs and learning has been explored - scholars have argued that shared beliefs change as a result of learning based on the emergence of new technical information. These studies have focused on explaining the foreign policy changes that brought about the end of the Cold War, but they could equally be used to explain why political leaders are beginning to doubt the value of nuclear arsenals, based on new information that highlights the negative environmental, economic and political effects of nuclear weapons. Ernest R. May, *"Lessons" of the Past* (New York: Oxford University Press, 1973); Jervis, chapter 6; George W. Breslauer, 'Explaining Soviet Policy Changes: Politics, Ideology and Learning,' in George W. Breslauer (ed.), *Soviet Policy in Africa: From the Old to the New Thinking* (Berkeley, CA: University of California Press, 1992); Janice Gross Stein, 'Political Learning By Doing: Gorbachev as Uncommitted Thinker and Motivated Learner,' *International Organization* 48 (Spring) 1994.

Studies have also focused on explaining the diffusion of norms, including the nonproliferation norm. Peter Haas, 'Epistemic Communities and International Policy Coordination,' *International Organization* 46 (Winter) 1992; Emmanuel Adler, 'The Emergence of Cooperation: National Epistemic Communities and the International Evolution of the Idea of Nuclear Arms Control,' *International Organization* 46 (Winter) 1992.

²³ Although there have been a number of insightful ideas driven studies into the relationship between identity formation and national, regional, and international security, none specifically address nuclear proliferation dynamics. Elizabeth Kier, 'Culture and French Military Doctrine Before World War II,' in Katzenstein, *op. cit.*; Robert G. Herman, 'Identity, Norms and National Security: The Soviet Foreign Policy Revolution and the end of the Cold War,' Katzenstein, *op. cit.*; Thomas U. Berger, 'Norms, Identity and National Security in Germany and Japan,' in Katzenstein, *op. cit.*; Michael N. Barnett, 'Identity and Alliances in the Middle East,' in Katzenstein, *op. cit.*; Peter J. Katzenstein, 'Taming of Power: German Unification, 1989-1990,' in Meredith Woo-Cumings and Michael Loriaux (eds.), *Past as Prelude: History in the Making of a New World Order* (Boulder, CO: Westview Press, 1993); Thomas Risse Kappen, *Cooperation Among Democracies: The European Influence on U.S. Foreign Policy* (Princeton, NJ: Princeton University Press, 1995); Martin Kramer, 'Arab Nationalism: Mistaken Identity,' *Daedalus* 122 (Summer) 1993; Michael Barnett and Jack Levy, 'Domestic Sources of Alliances and Alignments: The Case of Egypt,' *International Organization* 45 (Summer) 1991; Jongsuk Chay, *Culture and International Relations* (New York: Praeger, 1990).

as the ultimate symbol of prestige, modernity and power. The two issues became linked to the extent that any attempt to deprive India of that symbol is interpreted as an attack on the identity of the state. This was not the case with Ukraine, which began the process of identity-building at a time when the nonproliferation norm was well-entrenched and ideas about nuclear prestige were waning. For Ukraine, nuclear weapons were simply seen as a means to an end, a necessary evil required to extract crucial political and economic concessions from Russia and the West. Nuclear weapons were never part of Ukraine's national identity, which made it far easier for Kiev to abandon them once their short-term goals had been achieved. In South Africa's case, nuclear weapons were renounced during the process of identity re-formation. They could be relinquished because the ideas, values and norms of the state had changed dramatically.

Unfortunately, there have been few attempts at theory-building where culture and identity is concerned. This is not surprising, given that the fluidity of social customs and rules, and the complex interplay between physical reality and interpretation, complicate such an exercise. Theoretical studies have either tended to be dominated by capabilities and material self-interest - variables that are easier to measure than identities and customs - or they have been prone to conceptual confusion.²⁴ It is in this area that the biggest gaps and 'blind spots' in the literature lie, and it is here that the greatest potential exists for future contributions to understanding the dynamics of nuclear proliferation.

²⁴ Theories developed by most constructivists/reflectivists and institutionalists incorporate the notion of identity, but reveal a causal relationship between identity and power and interests, rather than identity and culture. Chafetz (1993); Franck (1990); Onuf (1989); Ruggie (1983); Wendt (1992).

Studies in strategic culture have the potential to provide a convincing alternative to interest driven approaches, but the concept is currently underdeveloped and prone to confusion. There have been few attempts to construct a rigorous concept of strategic culture that specifies its scope and content, the objects of analysis, the historical periods from which these are drawn, and research methods. What is needed is a universal definition of the concept, and a research strategy that can measure the effects of strategic culture on the process of making strategic choices. There are a few studies that do begin to fulfil these objectives, and it is on these studies that future research should build. These include: Alastair Iain Johnston, *Cultural Realism: Strategic Culture and Grand Strategy in Chinese History* (Princeton, NJ: Princeton University Press, 1995); Alastair Iain Johnston, 'Cultural Realism and Strategy in Maoist China,' in Katzenstein, *op. cit.*; Jeffrey W. Legro, *Cooperation Under Fire: Anglo-German Restraint During World War II* (Ithaca, NY: Cornell University Press, 1995); Price and Tannenwald; and Kier.

Conclusion

This thesis has tested three versions of neorealism to assess their explanatory leverage as theories of nuclear proliferation. Of these, parsimonious neorealism provided the least insight into proliferation dynamics, leading to inaccurate predictions and unconvincing explanations. The fundamental problem with this theory is that it derives explanations from changes in polarity, which, though significant, is not the most important driver of nuclear policy in any of the states in question. Contrary to theoretical expectations, India and South Africa developed indigenous nuclear weapons programmes under bipolarity, and South Africa and Ukraine abandoned their nuclear arsenals under multipolarity. This shows that crucial variables are omitted from the theory. Although Waltz has argued that this theory was never intended to explain unit level outcomes, he has used the concept of polarity to explain and predict past, present and future cases of nuclear proliferation. Moreover, other theorists have adopted Waltz's approach unreservedly, claiming that it is the strongest theory of proliferation yet developed. This thesis has argued that, while parsimonious neorealism is indeed an elegant theory, it is too spare to pass as a convincing theory of nuclear proliferation.

The case studies showed that balance of power theory possesses greater explanatory leverage than its more sophisticated relative. In focusing on the arms racing dynamics generated by anarchy, rather than the structural effects of the distribution of power, this version of neorealism was able to provide a more convincing explanation for the phenomenon. However, this theory suffers from two fundamental flaws. First, the case studies demonstrated that states balance against threats rather than capabilities. Rather than responding purely to the strategic power of an adversary, proliferators responded to perceived threats. Such threat perceptions were influenced by the internal characteristics of both the proliferator and adversary. Explanations offered by balance of power theory ignore these important domestic variables. Second, the case studies found that nuclear policy is multifaceted. Whilst strategic goals were often

paramount in the calculations of nuclear decisionmakers, a complex interplay of economic, political and cultural factors shaped the nuclear behaviour of each of the states. Traditional balance of power theory is unable to account for this range of interests without redefining the concept of power.

This thesis has shown that structural realism provides a richer theory of nuclear proliferation than both parsimonious neorealism and balance of power theory. The theoretical framework offered by this more complex version of neorealism takes systems analysis to the limits of its explanatory leverage without collapsing into description. This is achieved by linking the unit and structural levels through the concepts of relational and attributive power, and the notion of interaction capacity. This improves on more traditional versions of neorealism in three ways. First, it allows the state to be brought back into the analysis. The case studies showed that nuclear policy can be strongly influenced by the nature of the state and the insecurities generated by internal threats to survival. Second, by introducing the notion of interaction capacity, structural realism allows for a less static definition of anarchy and, as a result, offers a more dynamic theory of nuclear proliferation. According to this theory, the nature of anarchy can change depending on the levels of political and economic interaction between states. Third, it leads to a greater understanding of the linkage between different policy goals and the impact of these on nuclear policy. The disaggregation of the concept of power allows nuclear policy to be placed within the broader context of each country's foreign policy goals rather than its narrow strategic interests. This can explain nuclear behaviour that is driven by prestige considerations.

This thesis has not, however, proved that structural realism can provide an adequate explanation for the complex dynamics of nuclear proliferation. In particular, the case studies showed that structural realism suffers from three major empirical weaknesses as a theory of nuclear proliferation. First, it could not explain incidents when the states in question failed to take action to maximise their chances of survival. In each case, there were occasions when individuals and organisations had a powerful influence

over nuclear policy – occasionally in ways that appeared to undermine the national interest. Structural realism was unable to explain these cases because it abstracts from the level of the individual. Second, structural realism failed to explain the evolution of ideas about nuclear weapons, deriving explanations from the realm of material capabilities and interests, and neglecting the power of ideas and norms. The case studies showed that ideas about nuclear weapons and their utility have changed since the beginning of the nuclear era, and that these ideas have influenced nuclear policy. Third, it was observed that, to a certain extent, the identity of the state and the collective expectations of society impacted on nuclear policy in ways that could not be explained using explanations derived from capabilities and interests. Cultural factors were found to be highly significant in all of the states in question.

No single theory is likely to be suited to the task of explaining these complex dynamics, as such a theory would have to derive predictions and explanations from both material and ideational sources. Although it has been suggested that an evolutionary theory could be developed to perform this function, it may be that the search for such a metatheory is likely to prove futile due to the incompatible epistemologies.²⁵ Perhaps the best solution to this problem, is to use structural realism as the first cut of any explanation of proliferation dynamics, and to use ideational approaches to shed light on the blind spots left by systemic explanations. Although ideational and material approaches are frequently in conflict in international relations literature, these approaches can be complementary. Such a two-tiered approach will inevitably be complex, but theoretical parsimony is worth sacrificing if it improves our knowledge of proliferation dynamics.

²⁵ Peter John has argued that an evolutionary, synthetic theory could be developed by combining both approaches (although his focus is public policy rather than nuclear policy). However, this is likely to present problems because, whereas material approaches are suited to positivist epistemologies, ideational approaches are more suited to interpretive frameworks. Peter John, *Analysing Public Policy* (London: Pinter, 1998), pp. 152-202.

Appendix

This telegram, released in 1995 under the U.S. Freedom of Information Act, illustrates the empirical problems associated with working on nuclear proliferation issues.

U.S. NSA, Washington, DC: Telegram (classification excised) about nuclear developments on the Korean peninsula, from the U.S. Embassy, Seoul, to the DOS, Washington, September 1989.

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Bibliography

A. Primary Sources

1. Unpublished documents and manuscripts

Australian Archives, Canberra. *Document Series No. A1838/2, Item No. 919/12/9 Part 1*. Diplomatic correspondence.

Bailey, Emily, Darryl Howlett, and John Simpson. 1993. 'Events Preceding South Africa's Accession to the NPT on 10 July 1991.' Notes taken at the PPNN Workshop on South Africa's nuclear deterrent programme and non-proliferation policy. Zimbabwe (April 2-4).

Blix, Hans. 1983. 'The International Nuclear Fuel Cycle - Some Problem Areas.' Speech before the AIF/FORATOM International Fuel Cycle Conference, Geneva (31 May-3 June).

National Security Archive, Washington, DC. 1960-1983 *South Asia files*. Selection of previously classified and unclassified diplomatic correspondence from the U.S. Embassies in India and Pakistan to the DOS, and internal NSC, ACDA, DOD, DOS, and White House memoranda, correspondence and briefing papers.

National Security Archive, Washington, DC. 1968-1990. *North Korea file*. Some documents released in 1996 under the Freedom of Information Act (though heavily censored). Diplomatic correspondence between the U.S. Embassy in Seoul and the DOS, and internal DOS, NSC, ACDA and White House memoranda, correspondence and briefing papers.

National Security Archive, Washington, DC. 1974-1988. *South Africa files*. Diplomatic correspondence from the U.S. Embassy, Pretoria, to the DOS, and internal DOS, DOD, ACDA, and NSC policy papers, briefing papers and intelligence reports.

Public Records Office. 1962. Diplomatic correspondence between the Foreign Office, London and the British Embassy, South Africa. *FO 371/161922; FO 371/161923*.

Public Records Office. 1964. Diplomatic correspondence between the Foreign Office, London and the British Embassy, South Africa. *FO 371/177111; FO 371/177061*.

Public Records Office. 1965. Diplomatic correspondence between the Foreign Office, London and the British Embassy, South Africa. *FO 371/182073; FO 371/188091*.

Public Records Office. 1966. Diplomatic correspondence between the Foreign Office and the British Embassy, South Africa. *FO 371/177061*.

Stumpf, Waldo. 1993. 'The Accession of a "Threshold State" to the NPT: The South African Experience.' Presentation given at the Conference on Nuclear Non-Proliferation: The Challenge of a New Era. Organised by the Carnegie Endowment for International Peace, Washington, DC (17-18 November).

Stumpf, Waldo. 1993. 'South Africa's Limited Nuclear Deterrent Program and the Dismantling Thereof Prior to South Africa's Accession to the Nuclear Non-Proliferation Treaty.' Presentation at the South African Embassy, Washington, DC (July 23).

U.S. Director of Central Intelligence. 1980. 'South Africa: Defense Strategy in an Increasingly Hostile World.' Unpublished intelligence memo (January).

Wheeler, T. F. 1994. 'Crisscrossing the Nuclear Threshold: The South African Experience.' An Address to the West-West Agenda, by the Chief Director of the Multilateral Branch of the South African Department of Foreign Affairs. Washington, DC (October 4).

2. Published documents and manuscripts

African National Congress of South Africa. 1975. *The Nuclear Conspiracy: FRG Collaborates to Strengthen Apartheid*. Lusaka: ANC Information Department.

Archive of Foreign Policy of the Russian Federation, Moscow. *Fond 090, op. 24, d.6. p. 80, ll. 134-203*. Documents cited in Woodrow Wilson International Center for Scholars Website: Cold War International History Project. <http://cwihip.si.edu>.

Baranwal, S. P., ed. 1974. *Military Yearbook*. New Delhi: Guide Publications.

British Broadcasting Corporation. 1983-1984. *Summary of World Broadcasts: Far East*. SWB/FE/7542/B/1-3 to SWB/FE/7781/A3/5-6. (Selected broadcasts).

Center for the Preservation of Contemporary Documentation, Moscow. *Fond 5. op. 49, d. 536, 1. 58*. Documents obtained from the Woodrow Wilson International Center for Scholars Website: Cold War International History Project. <http://cwihip.si.edu>.

Commonwealth Committee of Foreign Ministers on Southern Africa. 1989. *Banking on Apartheid: The Financial Sanctions Report*. London: CCFMSA.

De Klerk, F. W. 1993. 'The Nuclear Non-Proliferation Treaty and Related Matters.' Speech to Parliament (March 24).

Defense Intelligence Agency. 1991. *North Korea: The Foundations for Military Strength*. Washington, DC: Defense Intelligence Agency (October).

Donnelly, W. H., and Z. Davis. 1992. 'India and Nuclear Weapons.' *CRS Issue Brief*. Washington, DC: Library of Congress (20 December).

Donnelly, Warren H. 1989. 'India and Nuclear Weapons.' *CRS Issue Brief*. Washington, DC: Library of Congress (27 January).

Economist Intelligence Unit. 1993. *Country Report: Ukraine*. EIU, London (2nd Quarter).

- Economist Intelligence Unit*. 1994. *Country Report: Ukraine*. EIU, London (1st Quarter).
- Economist Intelligence Unit*. 1994. *Country Report: Ukraine*. EIU, London (2nd Quarter).
- Economist Intelligence Unit*. 1994. *Country Report: Ukraine*. EIU, London (3rd Quarter).
- Eisenhower, D. D. 1966. *The White House Years: Waging Peace, 1956-61*. London: W. Heinemann.
- Executive Office of the President. 1980. *Ad Hoc Panel Report on the September 22 Event*. Washington, DC: Office of Science and Technology Policy (15 July).
- Foreign Broadcast Information Services. 1989-1994. North Korea and China. *FBIS-EAS-89-151 to FBIS-EAS-94-117; FBIS-CHI-91-186; FBIS-Trends-09Aug89-North Korea* (Selected reports).
- Foreign Broadcast Information Services. 1991-1993. Russia and Ukraine. *FBIS-SOV-91-188 to FBIS-SOV-93-044* (Selected reports).
- Government of India. 1948-1991. *Lok Sabha Debates*. New Delhi (Selected issues available at SOAS library).
- Government of India. 1948-1980. *Rajya Sabha Debates*. New Delhi (Selected issues available at SOAS library).
- Government of India. 1957-85. *Department of Atomic Energy Annual Reports*. New Delhi. (Selected years).
- Government of India. 1970. *Atomic Energy and Space Research: A Profile for 1970-80*. New Delhi: AEC.
- Government of India. 1971. *Report on Parliament and Foreign Policy: A Study*. New Delhi: Lok Sabha Secretariat.
- Government of India. 1980-85. *Ministry of Information and Broadcasting*. New Delhi.
- Gupte, Pranay. 1987. "We Don't Have the Bomb:" An Interview by Rajiv Gandhi.' *Forbes* (18 May).
- International Atomic Energy Agency. 1968. *Directory of Nuclear Reactors*, volume 1. Vienna: IAEA (20 May).
- Joint Publications Research Service. 1992-1994. North Korea. *JPRS-TND-92-019 to JPRS-TND-94-013* (Selected reports).
- Nehru, J.L. 1947. *The Discovery of India*. Calcutta: Signet Press.
- Nehru, J.L. 1958. *An Autobiography*. London: Bodley Head.

- Nehru, J.L. 1962. *Autobiography*. Bombay: Allied Publishers.
- Newby-Frazer, A. R. 1979. *Chain Reaction: Twenty Years of Nuclear Research and Development in South Africa*. Pretoria: AEB.
- Niksch, Larry. 1996. *North Korea's Nuclear Weapons Program*. CRS Issue Brief. Washington, DC: Library of Congress, (23 April).
- Ramanna, Raja. 1991. *Years of Pilgrimage: An Autobiography*. New Delhi: Viking.
- Republic of South Africa. 1977. *White Paper on Defense and Armaments Supply*. Simonstown: South African Navy Printing Unit.
- Republic of South Africa. 1982. *White Paper on Defense and Armaments Supply*. Cape Town: South African Navy Printing Unit.
- SIPRI. 1989-1997. *Year Book, World Armament and Disarmament*. Various publishers.
- U.S. Government. 1961-1996. ACDA, *Documents on Disarmament*. Washington, DC: U.S. Government Printing Office. (Selected years).
- U.S. Government. 1979. Congress, *Committee on Foreign Relations and Foreign Affairs, Legislation on Foreign Relations to 1978, volume 1, and Joint Committee*, U.S. Congress. Washington, DC: U.S. Government Printing Office.
- The Ukrainian Quarterly*. 1994. 'Pertinent Documents.' *Ukrainian Quarterly* 50 (Spring).
- The Ukrainian Quarterly*. 1995. 'Pertinent Documents.' *Ukrainian Quarterly* 51 (Spring).
- U.S. Government. 1984. Congress, Senate Foreign Relations Committee, *U.S. Interests in South Asia: A Staff Report*. Washington, DC: U.S. Government Printing Office.
- United Nations. 1945-1965. *The United Nations and Disarmament*. New York: UN.
- United Nations. 1948-1996. *The United Nations Yearbook*. New York: UN (Selected years).
- United Nations. 1970-1975. *The United Nations and Disarmament*. New York: UN.
- United Nations. 1979. *Inquiry into the reports concerning a nuclear explosion by South Africa*. Report of the Secretary General. A/34/674. New York: UN (12 November).
- United Nations. 1980. *South Africa's Plan and Capability in the Nuclear Field*. Report of the Secretary General. New York: United Nations Study Series.
- United Nations. 1981. Center for Disarmament. *South Africa's Plan and Capability in the Nuclear Field*. A/35/402. New York: UN.

United Nations. 1984. Institute for Disarmament Research. *South Africa's Nuclear Capability. A/39*. New York: UN.

United Nations. 1990. *Implementation of the Declaration on the Denuclearization of Africa: South Africa's Nuclear-Tipped Ballistic Missile Capability*. Report of the Secretary General. New York: United Nations Study Series.

United Nations. 1995. *The United Nations and Nuclear Non-Proliferation*. New York: United Nations Department of Public Information.

United States Senate. 1976. *U.S. Policy Toward Southern Africa*, Hearings. Committee on Foreign Relations. Subcommittee on African Affairs. 94th Congress, 1st session. Washington: U.S. Government Printing Office.

Wolf, Amy F., and Theodore W. Galdi. 1994. Nuclear Weapons in the Former Soviet Union: Location, Command and Control. *CRS Issue Brief*. Washington, DC: Library of Congress (October).

B. Secondary Sources

1. Unpublished manuscripts

Alden, John C. 1993. *The South African State and Reform Apartheid: Processes of Change in State Strategy Under P. W. Botha*. Ph.D. Thesis. The Fletcher School of Law and Diplomacy.

Amuah, Isaac. 1994. 'Nuclear Policy in South Africa: Past, Present and the Future.' Unpublished Paper. Cambridge, MA: Harvard University.

Brown, Walton Lyonnaise. 1982. *Assessing the Impact of American Nuclear Non-proliferation Policy, 1970-1980: An Analysis of Six Cases*. Ph.D. Thesis, University of Michigan.

Cheema, Mohammad Zafar Iqbal. 1991. *Indian Nuclear Strategy: 1947-91*. Ph.D. Thesis, King's College, University of London.

Cheon, Seong W. 1992. 'National Security and Stability in East Asia: The Korean Peninsula.' Paper presented at the PPNN Core Group Meeting, Japan (November).

Christie, Renfrew. 1993. 'South Africa's Nuclear History.' Paper Presented at the Nuclear History Program. Fourth International Conference. Sofia-Antipolis, Nice, France, 23-27 June.

Delpesch, Terese. 1998. 'Nuclear Weapons: Their Present and Future. A Debate.' Paper presented at the IISS 40th Annual Conference, Oxford (3-6 September).

DeWing, Martin J. 1993. *Ukraine: Independent Nuclear Weapons Capability Rising*. M.A. Thesis, Naval Postgraduate School, Monterey, CA.

- Flower, Lindsey M. 1994. *Nuclear Option Diplomacy: Exploiting Nuclear Weapons Potential as Bargaining Leverage*. M.A. Thesis, University of Oxford.
- Gdaia, Abdulrahman M. 1985. *Nuclear Proliferation in the Third World: An Analysis of Decisionmaking in India and Pakistan*. Ph.D. Thesis. University of Northern Arizona.
- Hagerty, Devin. 1995. *The Theory and Practice of Nuclear Deterrence in South Asia*. Ph.D. Thesis, University of Pennsylvania.
- Kennard, Charles. 1983. 'Valindaba - The Talking is Over.' Unpublished Paper. Monterey, CA: Naval Postgraduate School.
- Lellouche, Pierre. 1978. 'Motives and Disincentives to Nuclear Proliferation: The Garrison States.' Paper presented at the IISS-ACA Seminar on Nuclear Proliferation and Arms Control in the 1980s. Ballaggio, Italy, (6-8 May).
- Minty, Abdul. 1978. 'South Africa's Military and Nuclear Build-Up.' Paper Presented at the International NGO Conference for Action Against Apartheid. Geneva, (28-31 August).
- Mistry, Dinshaw J. 1993. *Nuclear Realpolitik in South Asia: A Case for Rolling Back India and Pakistan's Nuclear Weapon Programs*. Unpublished Paper. School of International and Public Affairs, Columbia University.
- Moshaver, Ziba. 1988. *The Question of Nuclear Weapons Proliferation on the Indian Subcontinent*. Ph.D. Thesis, University of Oxford.
- Ohlson, T. 1988. 'The Apartheid Nuclear Deterrent: Background, Rationale, and Strategic Significance.' Unpublished paper. Center for African Studies, Eduardo Mondlane University.
- Park, Tong Hyong. 1992. *Korean Arms Control: Arms Control Policies of the Two Koreas*. M.A. Thesis, Florida State University.
- Reiss, Mitchell. 1985. *The Determinants of Nonproliferation: Why Countries Decide Not to Acquire Nuclear Weapons*. Ph.D. Thesis, University of Oxford.
- Smith, Dennis. 1993. 'India and the Proliferation of Nuclear Weapons.' Unpublished Paper. The Institute of Public Policy, George Mason University, Fairfax, Virginia.
- Sidhu, W. P. S. 1997. *The Development of an Indian Nuclear Doctrine since 1980*. Ph.D. Thesis, University of Cambridge.

2. Published Books and Reports

- Adams, James. 1984. *The Unnatural Alliance: Israel and South Africa*. New York: Quartet.

- Alam, Mohammed B. 1988. *India's Nuclear Policy*. New Delhi: Mittal.
- Albright, D., F. Berkhout and W. Walker. 1997. *Plutonium and Highly Enriched Uranium 1996: World Inventories, Capabilities and Policies*. Oxford: Oxford University Press.
- Albright, David. 1994. *North Korean Plutonium Production*. ISIS Report (3 June).
- Albright, David. 1994. *South Africa's Secret Nuclear Weapons*. ISIS Report (May).
- Allison, Graham. 1971. *Essence of Decision: Explaining the Cuban Missile Crisis*. Boston: Little, Brown.
- Al-Mashat, A. M. 1985. *National Security in the Third World*. Boulder, CO: Westview Press.
- Andreis, Marco de, and Francesco Calogero. 1995. *The Soviet Nuclear Weapon Legacy*. SIPRI Research Report No. 10, Oxford University Press.
- Archer, Clive, and Olli-Pekka Jalonen, eds. 1995. *Changing European Security Landscape*. Research Report No. 63, Tampere Peace Research Institute.
- Arnett, Eric, ed. 1996. *Nuclear Weapons After the Comprehensive Test Ban: Implications for Modernisation and Proliferation*. New York: Oxford University Press.
- Aron, Raymond. 1966. *Peace and War: A Theory of International Relations*. New York: Praeger.
- Azar, Edward, and Chung-in Moon, eds. 1988. *National Security in the Third World: The Management of Internal and External Threats*. Upleaden: Edward Elgar Publishing.
- Babbage, Ross, and Sandy Gordon, eds. 1992. *India's Strategic Future*. London: Macmillan Press.
- Bailey, Sydney D., and Sam Daws. 1998. *The Procedure of the UN Security Council*. 3rd edition. Oxford: Oxford University Press.
- Bajpai, Kanti P., P. R. Chari, Pervaiz Iqbal Cheema, Stephen P. Cohen and Sumit Ganguly. 1995. *Brasstacks and Beyond: Perception and Management of Crises in South Asia*. Urbana, IL: ACDIS, University of Chicago at Urbana-Champaign.
- Barber, James, and John Barratt. 1990. *South Africa's Foreign Policy: The Search For Status and Security 1945-1988*. Cambridge: Cambridge University Press.
- Barber, James. 1973. *South Africa's Foreign Policy, 1945-1970*. London: Oxford University Press.
- Batiouk, Victor. 1992. *Ukraine's Non-nuclear Option*. UNIDIR Research Paper No. 14, New York.

- Beck, Robert J., Anthony Clark Arend and Robert D. Vander Lugt, eds. 1996. *International Rules: Approaches from International Law and International Relations*. Oxford: Oxford University Press.
- Bhambhri, C. P. 1994. *Indian Politics Since Independence*. New Delhi: Shipra Publications.
- Bhargava, G. S. 1976. *India's Security in the 1980s*. Adelphi Paper No. 125. London: IISS.
- Bhatia, Shyam. 1979. *India's Nuclear Bomb*. Ghazibad: Vikas Publishing House.
- Bidawi, Praful, and Achin Vanaik. 1996. *Testing Times: The Global Stake in a Nuclear Test Ban*. Motala: Motala Grafiska.
- Booth, Ken. 1991. *New Thinking About Strategy and International Security*. London: Harper Collins.
- Booth, Ken, and Steve Smith, eds. 1995. *International Relations Theory Today*. Cambridge: Polity Press.
- Bracken, Paul. 1983. *The Command and Control of Nuclear Forces*. New Haven: Yale University Press.
- Brecher, Michael. 1969. *Nehru: A Political Biography*. London: Oxford University Press.
- Breslauer, George W., ed. 1992. *Soviet Policy in Africa: From the Old to the New Thinking*. Berkeley, CA: University of California Press.
- Brito, D., and M. Intrilligator, eds. 1982. *Strategies for Managing Nuclear Proliferation*. Lexington, MA: Lexington Books.
- Brodie, Bernard. 1973. *War and Politics*. New York: Macmillan.
- Brown, Michael, Sean M. Lynn-Jones and Steven E. Miller, eds. 1995. *The Perils of Anarchy: Contemporary Realism and International Security*. Cambridge, MA: MIT Press.
- Buchan, Alastair. 1972. *The End of Bipolarity*. Adelphi Paper No. 91. London: IISS.
- Bull, Hedley, and Adam Watson, eds. 1984. *The Expansion of International Society*. Oxford: Oxford University Press.
- Bull, Hedley. 1977. *The Anarchical Society: A Study of Order in World Politics*. London: Macmillan.
- Bunge, Frederica, ed. 1981. *North Korea: A Country Study*. Washington, DC: U.S. Government Printing Office.

Bunn, George, Virginia I. Foran, Harald Muller, George Quester, Victor Utgoff and Michael O. Wheeler. 1995. *Security Assurances: Implications for the NPT and Beyond*. Washington, DC: Carnegie Endowment.

Burchill, Scott, and Andrew Linklater with Richard Devetak, Matthew Paterson, and Jacqui True. 1996. *Theories of International Relations*. London: Macmillan Press.

Buzan, Barry, Charles Jones, and Richard Little. 1993. *The Logic of Anarchy: Neorealism to Structural Realism*. New York: Columbia University Press.

Buzan, Barry. 1991. *People, States and Fear: An Agenda for International Security Studies in the Post-Cold War Era*. Hemel Hempstead: Harvester-Wheatsheaf.

Carras, Mary. 1979. *Indira Gandhi in the Crucible of Leadership*. Boston: Beacon Press.

Chari, P. R. 1995. *Indo-Pak Nuclear Stand-Off: The Role of the United States*. New Delhi: Manohar Publishers.

Chari, P. R., Pervaiz Iqbal Cheema and If Tekharuzzaman, eds. 1996. *Nuclear Nonproliferation in India and Pakistan: South Asian Perspectives*. New Delhi: Manohar Publishers.

Chay, Jongsuk. 1990. *Culture and International Relations*. New York: Praeger.

Chellaney, Brahma. 1993. *Nuclear Proliferation: The U.S.-Indian Conflict*. New Delhi: Orient Longman.

Chin O, Chung. 1978. *Pyongyang Between Peking and Moscow*. Mobile: University of Alabama Press.

Clark, Ian, and Iver B. Neumann, eds. 1996. *Classical Theories of International Relations*. London: Macmillan.

Claude, Inis, Jr. 1962. *Power and International Relations*. New York: Random House.

Cline, William R. 1981. *World Inflation and the Developing Countries*. Washington, DC: Brookings Institute.

Clough, Ralph N. 1987. *Embattled Korea: The Rivalry for International Support*. Boulder, CO: Westview Press.

Cohen, Stephen Philip. 1991. *Nuclear Proliferation in South Asia: The Prospects for Arms Control*. Boulder, CO: Westview Press.

Cortright, David, and Amitabh Mattoo, eds. 1996. *India and the Bomb: Public Opinion and Nuclear Options*. Notre Dame, IN: University of Notre Dame Press.

Cotton, James. 1993. *Asia's International Role in the Post-Cold War Era*. Adelphi Paper No. 275. London: IISS (March).

Coulombis, Theodore A., and Thanos P. Dokos, eds. 1995. *Arms Control and Security in the Middle East and the CIS Republics*. Athens: ELIAMEP.

Cowen Karp, Regina, ed. 1991. *Security With Nuclear Weapons?* New York: Oxford University Press.

Crevelde, Martin van. 1993. *Nuclear Proliferation and the Future of Conflict*. New York: Free Press.

Crocker, Chester. 1992. *High Noon in Southern Africa: Making Peace in a Rough Neighborhood*. New York: Norton.

De Klerk, William. 1991. *F. W. de Klerk: the Man in His Time*. Johannesburg: Jonathan Ball.

Desai, Ashok. 1976. *India's Nuclear Option*. New York: Praeger.

Doyle, Len and Roger Harris. 1986. *Empiricism, Explanation and Rationality: An Introduction to the Philosophy of the Social Sciences*. London: Routledge and Kegan Paul.

Doyle, Michael W. and G. John Ikenberry, eds. 1997. *New Thinking in International Relations Theory*. Boulder, CO: Westview Press.

Feldman, Shai. 1982. *Israeli Nuclear Deterrence: A Strategy for the 1980s*. New York: Columbia University Press.

Fetter, Steve. 1994. *The North Korean Problem: When Will it End?* DACS Seminar, MIT (November).

Fischer, David. 1992. *Stopping the Spread of Nuclear Weapons: The Past and the Prospects*. London: Routledge.

Franck, Thomas M. 1990. *The Power of Legitimacy Among Nations*. New York: Oxford University Press.

Frankel, Francine R., ed. 1995. *Bridging the Nonproliferation Divide: The United States and India*. Lanham: University Press of America.

Futrell, Robert Frank. 1971. *Ideas, Concepts and Doctrine: A History of Basic Thinking in the United States Air Force, 1907-1964*. Maxwell Air Force Base, Alabama: Air University.

Geldenhuys, Deon. 1981. *Some Foreign Policy Implications of South Africa's 'Total National Strategy'*. Braamfontein: South African Institute of International Affairs.

Geldenhuys, Deon. 1982. *What We Think? A Survey of White Opinion on Foreign Policy Issues*. Occasional Paper. Johannesburg: SAIIA.

- Geldenhuis, Deon. 1984. *The Diplomacy of Isolation*. London: Macmillan.
- Gjelstad, Jorn, and Olav Njolstad, eds. 1996. *Nuclear Rivalry and International Order*. Oslo: SIPRI.
- Goldblat, Jozef, ed. 1985. *Non-proliferation: The Why and the Wherefore*. Philadelphia: Taylor and Francis.
- Goldstein, Judith, and Robert O. Keohane. 1993. *Ideas and Foreign Policy: Beliefs, Institutions, and Political Change*. Ithaca, NY: Cornell University Press.
- Greenwood, Ted, Harold A. Feiveson, and Theodore B. Taylor. 1977. *Nuclear Proliferation: Motivations, Capabilities and Strategies for Control*. New York: McGraw-Hill.
- Groves, Leslie R. 1963. *Now It Can Be Told: The Story of the Manhattan Project*. London: Andre Deutsch.
- Grundy, K. W. 1973. *Confrontation and Accommodation in Southern Africa: The Limits of Independence*. Berkeley, CA: University of California Press.
- Grundy, Kenneth W. 1986. *The Militarization of South African Politics*. Bloomington, IN: Indiana University Press.
- Gupta, Shekhar. 1995. *India Redefines its Role*. Adelphi Paper No. 293. London: IISS.
- Gupta, Sisir. 1966. *Kashmir: A Study in India-Pakistan Relations*. London: Asia Publishing House.
- Ha, Pak Chae. 1989. *Crises and the Korean Peninsula*. Seoul: Korean Institute for Defense Analysis.
- Ha, Young Sun. 1983. *Nuclear Proliferation, World Order, and Korea*. Seoul: National University Press.
- Haas, Ernst B. 1967-8. *Collective Security and the Future International System*. Denver, CO: University of Denver.
- Hagerty, Devin. 1998. *The Consequences of Nuclear Proliferation: Lessons from South Asia*. Cambridge, MA: MIT Press.
- Halliday, F. 1989. *Cold War, Third World*. London: Century Hutchinson.
- Halperin, Morton H. 1965. *China and the Bomb*. New York: Praeger.
- Halperin, Morton H. 1974. *Bureaucratic Politics and Foreign Policy*. Washington, DC: Brookings Institution.

- Hayes, Peter. 1991. *Pacific Powderkeg: American Nuclear Dilemmas in Korea*. Lexington: Lexington Books.
- Herkin, Gregg. 1982. *The Winning Weapon*. New York: Vintage.
- Hersh, Seymour. 1991. *The Sampson Option: Israel's Nuclear Arsenal and American Foreign Policy*. New York: Random House.
- Herz, John H. 1962. *International Politics in the Atomic Age*. New York: Columbia University Press.
- Hobbes, Thomas. 1909. *Leviathan*. Oxford: Clarendon Press.
- Hoffmann, Stanley. 1968. *Gulliver's Troubles or the Setting of American Foreign Policy*. New York: McGraw Hill.
- Hollis, Martin, and Steve Smith. 1990. *Explaining and Understanding International Relations*. Oxford: Clarendon Press.
- Holsti, K. J. 1972. *International Politics: A Framework for Analysis*. Englewood Cliffs, NJ: Prentice-Hall.
- Holsti, K. J. 1997. *The State, War, and the State of War*. Cambridge: Cambridge University Press.
- Hopkins, Raymond F., and Richard W. Mansbach. 1973. *Structure and Process in International Politics*. New York: Harper and Row.
- Hounam, Peter, and Steve Mcquillan. 1995. *The Mini-Nuke Conspiracy: Mandela's Nuclear Nightmare*. London: Viking Press.
- Howlett, Darryl, ed. 1994. *South Asia, Nuclear Energy and Nuclear Non- Proliferation*. Southampton: PPNN.
- Hwan Ok, Tae. 1996. *Change and Challenge on the Korean Peninsula: Developments, Trends and Issues*. Washington, DC: Center for Strategic and International Studies (August).
- Jalonen, Olli-Pekka. 1994. *Captors of Denuclearisation? Belarus, Kazakhstan, Ukraine and Nuclear Disarmament*. Research Report No. 54, Tampere Peace Research Institute.
- Jaster, Robert S. 1990. *The 1988 Peace Accords and the Future of South-Western Africa*. Adelphi Paper No. 253. London: IISS.
- Jaster, Robert. 1980. *South Africa's Narrowing Security Options*. Adelphi Paper No. 159. London: IISS.

Jaworsky, John. 1995. *Ukraine: Stability and Instability*. McNair Paper No. 42, Washington, DC: Institute for National Strategic Studies, National Defense University.

Jervis, Robert. 1976. *Perception and Misperception in International Politics*. Princeton, NJ: Princeton University Press.

Jervis, Robert. 1989. *The Meaning of the Nuclear Revolution*. Ithaca, NY: Cornell University Press.

John, Peter. 1998. *Analysing Public Policy*. London: Pinter.

Johnston, Alastair Iain. 1995. *Cultural Realism: Strategic Culture and Grand Strategy in Chinese History*. Princeton, NJ: Princeton University Press.

Kane-Berman, John. 1993. *Political Violence in South Africa*. Johannesburg: South African Institute of Race Relations.

Kaplan, Morton A. 1962. *System and Process in International Politics*. New York: John Wiley and Sons.

Karis, Thomas, and Gwendolen M. Carter. 1977. *From Protest to Challenge: A Documentary History of African Politics in South Africa*. Stanford, CN: Hoover Institution Press.

Karnad, Bharat, ed. 1994. *Future Imperilled: India's Security in the 1990s and Beyond*. New Delhi: Viking.

Katzenstein, Peter J., ed. 1996. *The Culture of National Security: Norms and Identity in World Politics*. New York: Columbia University Press.

Kegley, Charles W. Jr., ed. 1991. *The Long Postwar Peace*. New York: Harper Collins.

Kegley, Charles W. Jr., ed. 1995. *Controversies in International Relations Theory: Realism and the Neoliberal Challenge*. New York: St. Martin's Press.

Keohane, Robert O., ed. 1986. *Neorealism and its Critics*. New York: Columbia University Press.

Kihl, Young Whan. 1994. *Korea and the World: Beyond the Cold War*. Boulder, CO: Westview Press.

King, Gary, Robert O. Keohane and Sidney Verba. 1994. *Designing Social Enquiry: Scientific Influence in Qualitative Research*. Princeton, NJ: Princeton University Press.

Kohl, Wilfred L. 1971. *French Nuclear Diplomacy*. Princeton, NJ: Princeton University Press.

Kohli, Atul, ed. 1988. *India's Democracy: An Analysis of Changing State-Society Relations*. Princeton, NJ: Princeton University Press.

- Krass, Alan S., Peter Boskma, and Wim A. Smit. 1983. *Uranium Enrichment and Nuclear Weapons Proliferation*. London: Taylor and Francis.
- Krepon, Michael, and Amit Sevak, eds. 1994. *Conflict Prevention and Confidence-Building Measures in South Asia: The 1990 Crisis*. Occasional Paper No. 17. Washington: The Henry L. Stimson Center.
- Krepon, Michael, and Amit Sevak, eds. 1995. *Crisis Prevention, Confidence Building, and Reconciliation in South Asia*. New York: St. Martin's Press.
- Kuzio, Taras. 1995. *Ukraine: Back from the Brink*. European Security Study No. 23, Institute for European Defence and Strategic Studies (September).
- Kuzio, Taras. 1995. *Ukrainian Security Policy*. The Washington Papers No. 167, Westport: Praeger.
- Lamont, Lansing. 1965. *The Day of Trinity*. New York: Atheneum.
- Lapp, Ralph E. 1970. *Arms Beyond Doubt: The Tyranny of Weapons Technology*. New York: Cowles.
- Lave, Jean. 1988. *Cognition in Practice*. Cambridge: Cambridge University Press.
- Lawrence, Robert M, and Joel Larus, eds. 1974. *Nuclear Proliferation: Phase II*. Lawrence, KA: University of Kansas Press.
- Lee, Steven P. 1993. *Morality, Prudence and Nuclear Weapons*. New York: Cambridge University Press.
- Legro, Jeffrey W. 1995. *Cooperation Under Fire: Anglo-German Restraint During World War II*. Ithaca, NY: Cornell University Press.
- Little, Richard, and Steve Smith. 1988. *Belief Systems and International Relations*. Oxford: Blackwell.
- Machiavelli, Niccolo. 1961. *The Prince*. Harmondsworth: Penguin.
- MacKenzie, Donald. 1990. *Inventing Accuracy: A Historical Sociology of Nuclear Missile Guidance*. Cambridge, MA: MIT Press.
- MacLean, Douglas, ed. 1984. *The Security Gamble: Deterrence Dilemmas in the Nuclear Age*. Totowa, NJ: Rowman and Allanheld.
- Mansourov, Alexandre Y. 1994. *North Korean Decision Making Processes Regarding the Nuclear Issue*. Berkeley, CA: Nautilus Institute (May).
- Marwah, Onkar, and Ann Schultz, eds. 1975. *Nuclear Proliferation and the Near-Nuclear Countries*. Cambridge, MA: Ballinger.

- May, Ernest R. 1973. *'Lessons' of the Past*. New York: Oxford University Press.
- Mazarr, Michael J. 1995. *North Korea and the Bomb: A Case Study in Non-Proliferation*. London: Macmillan Press.
- McInnes, Colin, and Mark G. Rolls, eds. 1994. *Post-Cold War Security Issues in the Asia-Pacific Region*. Essex: Frank Cass.
- Meli, Francis. 1989. *A History of the ANC: South Africa Belongs to Us*. Harare: Zimbabwe Publishing House.
- Mendl, Wolf. 1970. *Deterrence and Persuasion: French Nuclear Armament in the Context of National Policy, 1945-1969*. London: Faber and Faber.
- Meyer, Stephen M. 1984. *The Dynamics of Nuclear Proliferation*. Chicago: The University of Chicago Press.
- Mian, Zia, ed. 1995. *Pakistan's Atomic Bomb and the Search for Security*. Lahore: Gautam Publishers.
- Moodie, T. D. 1975. *The Rise of Afrikanerdom*. Berkeley: University of California Press.
- Moore, J. D. L. 1987. *South Africa and Nuclear Proliferation*. New York: St. Martin's Press.
- Moravcsik, Andrew. 1991. *Integrating International and Domestic Politics: A Theoretical Introduction*. PIPES seminar paper. Chicago: University of Chicago.
- Morgan, Patrick. 1977. *Deterrence: A Conceptual Analysis*. Beverly Hills, CA: Sage.
- Morgenthau, Hans. 1978. *Politics Among Nations: The Struggle for Power and Peace*. 5th ed. New York: Knopf.
- Moshaver, Ziba. 1991. *Nuclear Weapons in the Indian Subcontinent*. London: Macmillan Press.
- Motyl, Alexander. 1993. *Dilemmas of Independence: Ukraine After Totalitarianism*. New York: New York Council of Foreign Relations.
- Muller, Harald, ed. 1987. *A European Non-Proliferation Policy*. Oxford: Clarendon Press.
- Nair, V. K. 1992. *Nuclear India*. New Delhi: Lancer International.
- Neumann, Iver B. and Ole Waever, eds. 1997. *The Future of International Relations: Masters in the Making*. London: Routledge.
- Nolutshungu, Sam C. 1975. *South Africa in Africa: A Study of Ideology and Foreign Policy*. Manchester: Manchester University Press.

- Nye, Joseph S. 1986. *Nuclear Ethics*. New York: Free Press.
- Onuf, Nicholas. 1989. *World of Our Making: Rules and Rule in Social Theory and International Relations*. Columbia, SC: University of South Carolina Press.
- Ottaway, David. 1993. *Chained Together: Mandela, De Klerk, and the Struggle to Remake South Africa*. New York: Random House.
- Ottaway, Marina. 1993. *South Africa: The Struggle for a New Order*. Washington, DC: Brookings Institution.
- Overholt, William H., ed. 1977. *Asia's Nuclear Future*. Boulder, CO: Westview Press.
- Oxford Research Group. 1994. *Political Aspects of Nuclear Nonproliferation: A North-South Divide?* Oxford: Oxford Research Group (August).
- Pierre, Andrew J. 1972. *Nuclear Politics: The British Experience with an Independent Strategic Force, 1939-1970*. London: Oxford University Press.
- Poole, J. B., and Richard Guthrie, eds. 1995. *Verification 1995: Arms Control, Peacekeeping and the Environment*. Boulder: Westview Press.
- Posen, Barry. 1984. *The Sources of Military Doctrine: France, Britain and Germany Between the World Wars*. Ithaca, NY: Cornell University Press.
- Potter, William C. 1995. *The Politics of Nuclear Renunciation: The Cases of Belarus, Kazakhstan and Ukraine*. Occasional Paper No. 22, Washington, DC: The Henry L. Stimson Center.
- Quester, George, ed. 1995. *The Nuclear Challenge in Russia and the New States of Eurasia*. Armonk, NY: M. E. Sharpe.
- Quester, George. 1975. *What's New on Nuclear Proliferation?* Aspen Institute Occasional Paper. Denver: Aspen Institute for Humanistic Studies.
- Quester, George. 1973. *The Politics of Nuclear Proliferation*. Baltimore: John Hopkins.
- Rakove, M. L., ed. 1972. *Arms and Foreign Policy in the Nuclear Age*. New York: Oxford University Press.
- Rao, U. R. 1966. *India's Nuclear Policy*. New Delhi: Gandhi Peace Foundation.
- Reiss, Mitchell, and Robert S. Litwak, eds. 1994. *Nuclear Proliferation After the Cold War*. Washington DC: The Woodrow Wilson Center Press.
- Reiss, Mitchell. 1988. *Without the Bomb: The Politics of Nuclear Non-Proliferation*. New York: Columbia University Press.

Reiss, Mitchell. 1995. *Bridled Ambitions: Why Countries Constrain Their Nuclear Capabilities*. Washington DC: Woodrow Wilson Center Press.

Rhodie, Eschel. 1983. *The Real Information Scandal*. Pretoria: Orbis.

Risse Kappen, Thomas. 1995. *Cooperation Among Democracies: The European Influence on U.S. Foreign Policy*. Princeton, NJ: Princeton University Press.

Rogers, Barbara, and Zdenek Cervanka. 1978. *The Nuclear Axis: Collaboration Between West Germany and South Africa*. New York: New York Times.

Rosenau, James L., ed. 1969. *Linkage Politics*. New York: Free Press.

Rosecrance, Richard N. 1965. *Action and Reaction in World Politics*. Boston: Little, Brown.

Rosecrance, Richard N., ed. 1964. *The Dispersion of Nuclear Weapons: Strategy and Politics*. New York: Columbia University Press.

Russett, Bruce M. 1965. *Trends in World Politics*. New York: Macmillan.

Sagan, Scott D. 1993. *The Limits of Safety: Organizations, Accidents and Nuclear Weapons*. Princeton, NJ: Princeton University Press.

Sagan, Scott D., and Kenneth N. Waltz. 1995. *The Spread of Nuclear Weapons: A Debate*. New York: W. W. Norton and Company.

Schaerf, Carlo, and David Carlton, eds. 1991. *Reducing Nuclear Arsenals*. London: Macmillan.

Seiler, John. 1980. *Southern Africa Since the Portuguese Coup*. Boulder, CO: Westview Press.

Sengupta, B., ed. 1986. *Regional Cooperation and Development in South Asia*. New Delhi: Mittal.

Simpson, John, and Darryl Howlett, eds. 1995. *The Future of the Non-Proliferation Treaty*. Macmillan: London.

Sission, Richard, and Leo Rose. 1979. *War and Succession: Pakistan, India and the Creation of Bangladesh*. Berkeley, CA: University of California Press.

Smith, Chris. 1993. *Security, Sovereignty, and Nuclear Weapons in South Asia*. Faraday Discussion Paper No. 20. London: Council for Arms Control.

Smith, Jacqueline R. 1990. *Nuclear Ambitions: The Spread of Nuclear Weapons 1989-1990*. Boulder, CO: Westview Press.

- Snyder, Glenn H. 1961. *Deterrence and Defense*. Princeton, NJ: Princeton University Press.
- Snyder, Glenn, and Paul Diesing. 1977. *Conflict Among Nations*. Princeton, NJ: Princeton University Press.
- Snyder, Jack. 1991. *Myths of Empire: Domestic Politics and International Ambition*. Ithaca, NY: Cornell University Press.
- Snyder, R. C, H. W. Bruck, and B. Sapin. 1954. *Decisionmaking as an Approach to the Study of International Politics*. Princeton, NJ: Princeton University Press.
- Snyder, R. C. 1961. *Deterrence, Weapon Systems and Decisionmaking*. China Lake, CA: U.S. Naval Ordnance Test Station.
- Som Dutt, D. 1966. *India and the Bomb*. Adelphi Paper No. 30. London: IISS.
- Som Dutt, D. 1966. *The Defence of India's Northern Borders*. Adelphi Paper No. 25. London: IISS.
- Sondi, Manohar L., ed. 1988. *Foreign Policy and Legislatures: An Analysis of Seven Parliaments*. New Delhi: Abhinav Publications.
- Sook, Suh Dae. 1988. *Kim Il Sung: The North Korean Leader*. New York: Columbia University Press.
- Spector, Leonard S. 1984. *Nuclear Proliferation Today*. New York: Vintage Books.
- Spector, Leonard S. 1985. *The New Nuclear Nations*. New York: Vintage Books.
- Spector, Leonard S. 1987. *Going Nuclear*. Cambridge, MA: Ballinger.
- Spence, J. E. *International Problems of Nuclear Proliferation and the South African Position*. Occasional Paper. The South African Institute of International Affairs.
- Stankiewicz, Michael, ed., *Energy and Security in Northeast Asia: Fuelling Security*. IGCC Policy Paper No. 35. Berkeley, CA: University of California.
- Stockwell, J. 1978. *In Search of Enemies*. New York: Norton.
- Strydom, Ivor W. H. 1978. *The Super-Afrikaners: Inside the South African Broederbond*. Johannesburg: Jonathan Ball.
- Sundarji, K., ed. 1981. *Nuclear Weapons in Third World Context*. Mhow, India: College of Combat.
- Sur, S., ed. 1993. *Nuclear Deterrence: Problems and Perspectives in the 1990s*. New York: UNIDIR.

- Swamy, S. 1968. *Nuclear Policy for India*. New Delhi: Bharatiya Jana Sangh Publication.
- Tahir-kheli, Shirin. 1982. *The United States and Pakistan: The Evolution of an Influence Relationship*. New York: Praeger.
- Tetlock, Philip E., ed. 1989. *Behaviour, Society and Nuclear War*. Volume 1. New York: Oxford University Press.
- Thomas, Caroline. 1987. *In Search of Security: The Third World in International Relations*. Brighton: Wheatsheaf.
- Thomas, Raju C. 1986. *Indian Security Policy*. Princeton, NJ: Princeton University Press.
- Thomas, Raju C. 1993. *South Asian Security in the 1990s*. Adelphi Paper No. 278. London: IISS.
- Thomas, Raju C., ed. 1992. *Perspectives on Kashmir: The Roots of Conflict in South Asia*. Boulder, CO: Westview Press.
- Ulam, Adam B. 1971. *The Rivals: America and Russia Since World War II*. New York: Viking Press.
- Van Evera, Stephen. 1995. *Guide to Methodology for Students of Political Science*. Cambridge, MA: MIT Press.
- Walt, Stephen. 1987. *The Origins of Alliances*. Ithaca, NY: Cornell University Press.
- Walters, Ronald. 1987. *South Africa and the Bomb: Responsibility and Deterrence*. Lexington, MA: D. C. Heath and Company.
- Waltz, Kenneth N. 1959. *Man, the State and War*. New York: Columbia University Press.
- Waltz, Kenneth N. 1979. *Theory of International Politics*. Reading: Addison-Wesley.
- Waltz, Kenneth N. 1981. *The Spread of Nuclear Weapons: More May Be Better*. Adelphi Paper No. 171. London: IISS.
- Waltz, Kenneth N. 1995. *Peace, Stability and Nuclear Weapons*. IGCC Policy Paper No. 15. Berkeley, CA: University of California.
- Weisman, Steven, and Herbert Krosney. 1981. *The Islamic Bomb*. New York: Times Books.
- Wight, Martin. 1978. *Power Politics*. New York: Holmes and Meier.
- Wilson, A. J., and Dennis Dalton, eds. 1995. *The States of South Asia: Problems of National Integration*. London: C. Hurst.

Wilson, Monica, and Leonard Thompson, eds. 1975. *The Oxford History of South Africa*. Volume 2. Oxford: Oxford University Press.

Wolfers, Arnold, ed. 1959. *Alliance Policy in the Cold War*. Baltimore: John Hopkins University Press.

Wolfers, Arnold. 1962. *Discord and Collaboration*. Baltimore: John Hopkins University Press.

Woo-Cumings, Meredith, and Michael Lorriaux, eds. 1993. *Past as Prelude: History in the Making of a New World Order*. Boulder, CO: Westview Press.

Yager, Joseph A. 1989. *Nuclear Proliferation Strategy in Asia*. CNSN Paper (July).

Yager, Joseph. 1980. *Nonproliferation and U.S. Foreign Policy*. Washington DC: Brookings Institution.

Yakovenko, Natalya. 1995. *Independent Ukraine 1991-1995: A Difficult Stage of Development*. Balrigg Memorandum No. 12, Lancaster: CDISS, Lancaster University.

Zanders, Jean Pascal. 1996. *Dynamics of Chemical Armament: Towards a Theory of Proliferation*. Brussels: Vrije Universiteit Brussel.

3. Published articles and chapters

Adler, Emmanuel. 1992. 'The Emergence of Cooperation: National Epistemic Communities and the International Evolution of the Idea of Nuclear Arms Control.' *International Organization* 46 (I).

Albright, David, and Mark Hibbs. 1993. 'South Africa: The ANC and the Atom Bomb.' *Bulletin of the Atomic Scientists* 49 (April).

Albright, David. 1993. 'South Africa: A Curious Conversion.' *Bulletin of the Atomic Scientists* (June).

Alexandrova, Olga. 1994. 'Russia as a Factor in Ukrainian Security Concepts.' *Aussenpolitik* 1.

Anderson, Walter K. 1983. 'Domestic Roots of Indian Foreign Policy.' *Asian Affairs* 10 (iii).

Arel, Dominique, and Andrew Wilson. 1994. 'Ukraine Under Kuchma: Back to "Eurasia"?' *RFE/RL Research Report* 3 (19 August).

Auerbach, S. 1981. 'Arms for Pakistan Spurs Gandhi's Fears, Hawks' Calls for A-Weapons.' *Washington Post* (3 May).

- Axelrod, Robert and Robert O. Keohane. 1993. 'Achieving Cooperation Under Anarchy: Strategies and Institutions,' in David A. Baldwin, ed., *Neorealism and Neoliberalism: The Contemporary Debate*. New York: Columbia University Press.
- Ayoob, M. 1984. 'Security in the Third World: Is the Worm About to Turn?' *International Affairs* 60.
- Badhwar, I., and D. Bobb. 1987. 'Game of Brinkmanship.' *India Today* (15 February).
- Bajpai, Kanti. 1996. 'Secure Without the Bomb.' *Seminar* (August).
- Baker, Pauline H. 1987/8. 'South Africa: The Afrikaner Angst.' *Foreign Policy* (Winter).
- Baldwin, David A. 1993. 'Neoliberalism, Neorealism, and World Politics,' in David A. Baldwin, ed., *Neorealism and Neoliberalism: The Contemporary Debate*. New York: Columbia University Press.
- Banerjee, Diapankar. 1997. 'Revolution in Military Affairs.' *The Journal of the United Services Institution of India* 77 (July-September).
- Barber, James. 1994. 'South Africa: The Search for Identity.' *International Affairs* 70 (i).
- Barnaby, Frank. 1994. 'How Many Bombs? North Korea's Nuclear Weapon Program.' *International Defense Review* (August).
- Barnett, Michael N. 1996. 'Identity and Alliances in the Middle East,' in Peter J. Katzenstein, ed., *The Culture of National Security: Norms and Identity in World Politics*. New York: Columbia University Press.
- Barnett, Michael, and Jack Levy. 1991. 'Domestic Sources of Alliances and Alignments: The Case of Egypt.' *International Organization* 45 (Summer).
- Bayer, James, and Robert E. Bedeski. 1993. 'North Korea's Nuclear Option: Observations and Reflections on the Recent NPT Crisis.' *Korean Journal of Defense Analysis* 5 (Winter).
- Beaver, Paul, ed. 1994. 'North Korea: If the Flashpoint Becomes War.' *Jane's Defence Weekly* (August).
- Bender, Gerald J. 1989. 'Peacemaking in Southern Africa: The Luanda-Pretoria Tug-of-War.' *Third World Quarterly* 11 (ii).
- Benjamin, M. 1982. 'India Said to Eye Raid on Pakistan A-Plants.' *Washington Post* (20 December).
- Berger, Thomas U. 1996. 'Norms, Identity and National Security in Germany and Japan,' in Peter J. Katzenstein, ed., *The Culture of National Security: Norms and Identity in World Politics*. New York: Columbia University Press.

- Bermudez, Joseph S. 1991. 'North Korea's Nuclear Program.' *Jane's Intelligence Review* (September).
- Bermudez, Joseph S. 1994. 'North Korea's Nuclear Infrastructure.' *Jane's Intelligence Review* 6 (ii).
- Betts, Richard K. 1979. 'A Diplomatic Bomb for South Africa?' *International Security* 4 (ii).
- Betts, Richard K. 1979. 'Incentives for Nuclear Weapons: India, Pakistan, Iran.' *Asian Survey* 11 (November).
- Betts, Richard K. 1979. 'Nuclear Proliferation and Regional Rivalry: Speculations on South Asia.' *Orbis* 23 (Spring).
- Betts, Richard K. 1993. 'Paranoids, Pygmies, Pariahs and Nonproliferation Revisited.' *Security Studies* 2 (iii/iv).
- Bhargava, G. S. 1978. 'India's Nuclear Policy.' *India Quarterly* 34 (April-June).
- Bhargava, G. S. 1992. 'Nuclear Power in India: The Costs of Independence.' *Energy Policy* 20 (August).
- Bhattachajea, Ajit. 1981. 'The Fallacy of Playing it Tough.' *World Focus* 2 (June).
- Bhimaya, Kotera M. 1994. 'Nuclear Deterrence in South Asia: Civil-Military Relations and Decision-making.' *Asian Survey* 34 (July).
- Bianchi, Robert. 1986. 'Interest Group Politics in the Third World.' *Third World Quarterly* 8 (ii).
- Bluth, Christoph. 1994. 'Nuclear Weapons in Ukraine.' *Bulletin of Arms Control* 14 (May).
- Bobb, D. 1983. 'Descent to Acrimony.' *India Today* (15 December).
- Bonham, Matthew G. 1993. 'Cognitive Mapping as a Technique for Supporting International Negotiation.' *Theory and Decision* 34.
- Bonham, Matthew G., Victor M. Sergeev and Pavel Parshin. 1997. 'The Limited Test-Ban Agreement: Emergence of New Knowledge Structures in International Negotiation.' *International Studies Quarterly* 41.
- Boyle, Brendan. 1993. 'South Africa Says it has Destroyed its Nuclear Bombs.' *Executive News Service* (March).
- Bracken, Paul. 1993. 'Nuclear Weapons and State Survival in North Korea.' *Survival* 35 (iii).

- Brecher, Michael, and Jon Wilkenfeld. 1991. 'International Crises and Global Instability: The Myth of the Long Peace,' in Charles W. Kegley, Jr., ed., *The Long Postwar Peace*. New York: Harper Collins.
- Bredow, Wilfried von, Thomas Jager and Gerhard Kummel. 1997. 'North Korea Between Isolation, Dissociation and Integration.' *The Korean Journal of National Unification* 6.
- Breslauer, George W. 1992. 'Explaining Soviet Policy Changes: Politics, Ideology and Learning,' in George W. Breslauer, ed., *Soviet Policy in Africa: From the Old to the New Thinking*. Berkeley, CA: University of California Press.
- Briganti, Giovanni de, and Brooks Tigner. 1997. 'Ukraine Works to Shore up Western Ties in NATO Bid.' *Defense News* (3-9 February).
- Brzezinski, Zbigniew. 1972. 'How the Cold War Was Played.' *Foreign Affairs* (October).
- Buchan, Alastair. 1972. 'A World Restored.' *Foreign Affairs* (July).
- Bukkvoll, Tor. 1997. 'Ukraine and NATO: The Politics of Soft Cooperation.' *Security Dialogue* 28 (iii).
- Bunn, George, and Roland Timberbaev. 1996. 'Security Assurances to Non-Nuclear-Weapon States: Possible Options for Change.' *PPNN Issue Review* 7 (September).
- Bunn, George. 1995. 'Security Assurances Against Nuclear Attack: The Legal Framework for the NPT Extension Conference and Beyond,' in George Bunn, Virginia I. Foran, Harald Muller, George Quester, Victor Utgoff and Michael O. Wheeler, *Security Assurances: Implications for the NPT and Beyond*. Washington, DC: Carnegie Endowment.
- Burchill, Scott. 1996. 'Liberal Institutionalism,' in Scott Burchill, and Andrew Linklater with Richard Devetak, Matthew Paterson, and Jacqui True, *Theories of International Relations*. London: Macmillan Press.
- Burchill, Scott. 1996. 'Realism and Neorealism,' in Scott Burchill and Andrew Linklater with Richard Devetak, Matthew Paterson and Jacqui True, *Theories of International Relations*. London: Macmillan.
- Burns, John F. 1977. 'South Africa's Secret Atom Plant Suspected of Working on a Bomb.' *New York Times* (April 30).
- Burton, John. 1997. 'Fiddling While They Starve.' *Washington Post* (10 October).
- Bustin, Edouard. 1975. 'South Africa's Foreign Policy Alternatives and Deterrence Needs,' in Onkar Marwah and Ann Schultz, eds., *Nuclear Proliferation and Near Nuclear Countries*. Cambridge, MA: Ballinger.
- Buzan, Barry. 1988. 'People, States and Fear: The National Security Problem in the Third World,' in Edward Azar and Chung-in Moon, eds., *National Security in the Third*

World: The Management of Internal and External Threats. Upleaden: Edward Elgar Publishing.

Byung-Chul, Koh. 1993. 'Politics of Succession in North Korea: Consolidation or Disintegration?' *The Journal of East Asian Affairs* 7 (1).

Calder, Kent E. 1996. 'Energy and Security in Northeast Asia's Arc of Crisis,' in Michael Stankiewicz, ed., *Energy and Security in Northeast Asia: Fuelling Security*. IGCC Policy Paper No. 35. Berkeley, CA: University of California.

Cerniello, Craig. 1996. 'Ukraine Completes Final Transfer of Nuclear Warheads to Russia.' *Arms Control Today* (May/June).

Cernik, A. 1995. 'Ukraine Advances Non-proliferation.' *International Review* 16 (Spring).

Chadha, Navnita. 1995. 'Enemy Images: The Media and Indo-Pakistani Tensions,' in Michael Krepon and Amit Sevak, eds., *Crisis Prevention, Confidence Building and Reconciliation in South Asia*. New York: St. Martin's Press.

Chafetz, Glenn, Hillel Abramson, and Suzette Grillo. 1997. 'Culture and National Role Conceptions: Belarussian and Ukrainian Compliance with the Nuclear Nonproliferation Regime,' in Valerie M. Hudson, ed. *Culture and Foreign Policy*. Boulder, CO: Lynne Rienner Publishers.

Chafetz, Glenn. 1993. 'The End of the Cold War and the Future of Nuclear Proliferation: An Alternative to the Neorealist Perspective.' *Security Studies* 2 (iii/iv).

Chan, Steve. 1980. 'Incentives for Nuclear Proliferation: The Case of International Pariahs.' *The Journal of Strategic Studies* (May).

Chanda, Nayan. 1987. 'Yes, We Have No Bomb.' *Far Eastern Economic Review* (12 March).

Chanda, Nayan. 1992. 'Atomic Ambivalence.' *Far Eastern Review* (1 October).

Chari, P. R. 1976. 'South Africa's Nuclear Option.' *India International Centre Quarterly* (January-February).

Chellaney, Brahma. 1991. 'South Asia's Passage to Nuclear Power.' *International Security* 16 (Summer).

Chellaney, Brahma. 1993. 'The Challenge of Nuclear Arms Control in South Asia.' *Survival* 35 (Autumn).

Chellaney, Brahma. 1995. 'Naiveté and Hypocrisy: Why Anti-Proliferation Zealotry Does Not Make Sense.' *Security Studies* 4 (Summer).

Chol, O Won. 1994. 'Nuclear Development in Korea in the 1970s.' *Pacific Research* 7 (November).

- Christiansen, Thomas J, and Jack Snyder. 1990. 'Chain Gangs and Passed Bucks: Predicting Alliance Patterns in Multipolarity.' *International Organization* 44 (ii).
- Cohen, Bernard C. 1969. 'National-International Linkages: Super-Polities,' in James L. Rosenau, ed., *Linkage Politics*. New York: Free Press.
- Cohen, Stephen P. 1992. 'The Regional Impact of a Reforming India,' in *Asia's International Role in the Post-Cold War Era*. Adelphi Paper No. 276. London: IISS.
- Cotton, James. 1995. 'The North Korea-United States Nuclear Accord: Background and Consequences.' *Korea Observer* 26 (Autumn).
- Couper, Frank E. 1969. 'Indian Party Conflict on the Issue of Atomic Weapons.' *Journal of Developing Areas* 3 (January).
- Covault, Craig. 1994. 'Ukraine Accelerates Space Projects.' *Aviation Week & Space Technology* (27 June).
- Cowley, Andrew. 1994. 'Ukraine: Unruly Child.' *The Economist* (7 May).
- Crowe, William, and Alan D. Romberg. 1992. 'Rethinking Security in the Pacific.' *Foreign Affairs* 70 (ii).
- Cummings, Bruce. 1992. 'Spring Thaw for Korea's Cold War?' *Bulletin of the Atomic Scientists* 48 (iii).
- Dahlitz, Julie. 1979. 'Proliferation and Confrontation.' *Australian Outlook* 33 (i).
- Das, Parimal Kumar. 1978. 'Myth of Consensus.' *International Studies* 17 (iii/iv).
- Davies, R, and D. O'Meara. 1984. 'Total Strategy in Southern Africa: An Analysis of South African Regional Policy Since 1978.' *Journal of Southern African Affairs* 60.
- Davis, Nathaniel. 1978. 'The Angolan Decision of 1975: A Personal Memoir.' *Foreign Affairs* (Fall).
- Davis, Zachary S. 1993. 'The Realist Nuclear Regime.' *Security Studies* 2 (iii/iv).
- De Villiers, J. W, Roger Jardine, and Mitchell Reiss. 1993. 'Why South Africa Gave Up the Bomb.' *Foreign Affairs* 72 (v).
- Deshingkar, Giri. 1996. 'India,' in Eric Arnett, ed., *Nuclear Weapons After the Comprehensive Test Ban: Implications for Modernisation and Proliferation*. Oxford: Oxford University Press.
- Deudney, Daniel. 1993. 'Dividing Realism: Structural Realism Versus Security Materialism on Nuclear Security and Proliferation.' *Security Studies* 2 (iii/iv).

- Deutsch, John M. 1992. 'The New Nuclear Threat.' *Foreign Affairs* 71 (Fall).
- Dibb, Paul. 1997-1998. 'The Revolution in Military Affairs and Asian Security.' *Survival* 39 (Winter).
- Dick, Charles. 1994. 'The Military Doctrine of Ukraine.' *Jane's Intelligence Review* (March).
- Dingman, Roger. 1988. 'Atomic Diplomacy During the Korean War.' *International Security* 13 (iii).
- Dodd, Norman L. 1974. 'The South African Defense Force.' *Defense Studies Journal* (December).
- Doty, P. 1960. 'The Role of the Smaller Powers.' *Daedalus* 89.
- Doyle, Michael W. 1995. 'Liberalism and World Politics Revisited,' in Charles W. Kegley Jr. ed., *Controversies in International Relations Theory: Realism and the Neoliberal Challenge*. New York: St. Martin's Press.
- Dunn, John. 1993. 'The Ukrainian Nuclear Weapons Debate.' *Jane's Intelligence Review* (August).
- Dunn, Lewis A, and William H. Overholt. 1976. 'The Next Phase in Nuclear Proliferation Research.' *Orbis* (Summer).
- Dunn, Lewis A. 1995. 'A Widening Nuclear Circle: South Asian Choices in a Broader Perspective,' in Francine R. Frankel, ed., *Bridging the Nonproliferation Divide: The United States and India*. Maryland: University Press of America.
- Eberstadt, Nicholas. 1995. 'China's Trade with the DPRK, 1990-94.' *Korea and World Affairs* 19 (Winter).
- Eberstadt, Nicholas. 1997. 'The DPRK as an Economy Under Multiple Stresses: Analogies and Lessons from Past and Recent Historical Experience.' *The Korean Journal of National Unification* 6.
- Edwardes, M. 1967. 'India, Pakistan and Nuclear Weapons.' *International Affairs* (October).
- Eleukenov, Dastan. 1993. 'Ukrainian Nukes Hold Key to START.' *Defense News* (15-21 March).
- Elman, Colin, and Miriam Fendius Elman. 1995. 'History vs. Neorealism: A Second Look.' *International Security* 20 (i).
- Elman, Colin. 1996. 'Horses for Courses: Why Not Neorealist Theories of Foreign Policy?' *Security Studies* 6 (i).

- Enginsoy, Umit, and George Leopold. 1992. 'Kravchuk Urges Nuke Pullout.' *Defense News* (11-17 May).
- Ertman, Michael. 1993. 'North Korean Arms Capabilities and Implications: Nuclear, Chemical, and Ballistic Missile.' *Korea and World Affairs* 17 (iv).
- Evangelista, Matthew. 1997. 'Domestic Structure and International Change,' in Michael W. Doyle and G. John Ikenberry, eds., *New Thinking in International Relations Theory*. Boulder, CO: Westview Press.
- Eyre, Dana P. and Mark C. Suchman. 1996. 'Status, Norms and the Proliferation of Conventional Weapons: An Institutional Theory Approach,' in Peter Katzenstein, ed., *The Culture of National Security: Norms and Identity in World Politics*. New York: Columbia University Press.
- Falk, Pamela S. 1987. 'Cuba in Africa.' *Foreign Affairs* 65 (v).
- Feaver, Peter D, Steven R. David, Brahma Chellaney, Shai Feldman, and Brad Roberts. 1995. 'The Kenneth Waltz - Scott Sagan Debate.' *Security Studies* 4 (iv).
- Feaver, Peter D. 1992/3. 'Command and Control in Emerging Nuclear Nations.' *International Security* 17 (iii).
- Feaver, Peter D. 1993. 'Proliferation Optimism and Theories of Nuclear Operations.' *Security Studies* 2 (iii/iv).
- Fendius Elman, Miriam. 1995. 'The Foreign Policies of Small States: Challenging Neorealism in Its Own Back Yard.' *British Journal of Political Science* 25 (ii).
- Fischer, D. 1995. 'The Regional Track for the Last Three NPT Holdouts - Israel, India and Pakistan.' *PPNN Issue Review* 5 (May).
- Flank, Steven. 1993/4. 'Exploding the Black Box: The Historical Sociology of Nuclear Proliferation.' *Security Studies* 3 (Winter).
- Flank, Steven. 1994. 'Nonproliferation Policy: A Quintet for Two Violas?' *The Nonproliferation Review* (Spring/Summer).
- Flournoy, Michele A, and Kurt M. Campbell. 1988. 'South Africa's Bomb: A Military Option?' *Orbis* 32 (iii).
- Frankel, Benjamin. 1993. 'The Brooding Shadow: Systemic Incentives and Nuclear Weapons Proliferation.' *Security Studies* 2 (iii/iv).
- Gaddis, John Lewis. 1986. 'The Long Peace.' *International Security* (Spring).
- Gaddis, John Lewis. 1992/3. 'International Relations and the End of the Cold War.' *International Security* 17 (iii).

- Gaffney, Frank, jr. 1993. 'Delusions Over North Korea.' *Washington Times* (16 June).
- Galaka, Sergei P. 1993. 'Ukraine's Nuclear Dilemmas.' *Bulletin of Arms Control* 11 (August).
- Galtung, Johan. 1971. 'A Structural Theory of Imperialism.' *Journal of Peace Research* 13.
- Gandhi, Ashis. 1972. 'The Bomb, the NPT and the Indian Elites.' *Economic and Political Weekly* (August).
- Gandhi, Indira. 1982. 'India and its Foreign Policy.' *International Studies* 21 (ii).
- Ganguly, Sumit. 1993. 'Ethno Religious Conflict in South Asia.' 35 *Survival* (Summer).
- Ganguly, Sumit. 1995. 'Emergent Security Issues in South Asia.' *Director's Series on Proliferation* (1 June).
- Garnett, Sherman W. 1995. 'The Sources and Conduct of Ukrainian Nuclear Policy, November 1992 to January 1994,' in George Quester, ed., *The Nuclear Challenge in Russia and the New States of Eurasia*. Armonk, NY: M. E. Sharpe.
- Garwin, Richard L. 1992. 'Post-Soviet Nuclear Command and Control.' *Arms Control Today* (January/February).
- Gause, Ken E. 1994. 'Leadership Politics in North Korea.' *Jane's Intelligence Review* (November).
- Gerardi, Greg, and Joseph Bermudez. 1995. 'An Analysis of North Korean Ballistic Missile Testing.' *Jane's Intelligence Review* 7 (April).
- Ghosh, Partha S. 1980. 'Domestic Sources of India's Policy of Non-alignment.' *India Quarterly* 36 (iii/iv).
- Giles, Gregory F., and James E. Doyle. 1996. 'Indian and Pakistani Views on Nuclear Deterrence.' *Comparative Strategy* 15 (April).
- Gills, Barry K. 1995. 'Prospects for Peace and Stability in Northeast Asia: The Korean Conflict.' *Conflict Studies* 278 (February).
- Ginifer, Jeremy, Darryl Howlett, and John Simpson. 1993. 'Inside South Africa's Atomic Laager.' *Financial Times* (May 20).
- Glaser, Charles L. 1994/5. 'Realists as Optimists: Cooperation as Self-help.' *International Security* 19 (iii).
- Goldgeier James M, and Michael McFaul. 1992. 'A Tale of Two Worlds: Core and Periphery in the Post-Cold War Era.' *International Organization* 46 (ii).

- Goldstein, Avery. 1993. 'Understanding Nuclear Proliferation: Theoretical Explanation and China's National Experience.' *Security Studies* 2 (iii/iv).
- Gombert, David, Kenneth Watman, and Dean Wilkening. 1995. 'Nuclear First Use Revisited.' *Survival* (Autumn).
- Gopi Rethinaraj, T. S. 1998. 'Indian Blasts Surprise the World, but Leave Fresh Doubts.' *Jane's Intelligence Review* (July).
- Gow, James. 1992. 'Independent Ukraine: The Politics of Security.' *International Relations* 11 (December).
- Grant, Richard L. 1994. 'Juche's Last Gasp.' *Korean Journal of Defense Analysis* 6.
- Grey, Stephen. 1998. 'Pakistan Plays Nuclear Poker with India.' *Sunday Times* (22 March).
- Grieco, Joseph M. 1988. 'Anarchy and the Limits of Cooperation: A Realist Critique of the Newest Liberal Institutionalism.' *International Organization* 42 (iii).
- Grieco, Joseph M. 1993. 'Understanding the Problem of International Cooperation: The Limits of Neoliberal Institutionalism and the Future of Realist Theory,' in David A. Baldwin, ed., *Neorealism and Neoliberalism: The Contemporary Debate*. New York: Columbia University Press.
- Grieco, Joseph M. 1997. 'Realist International Theory and the Study of World Politics,' in Michael W. Doyle and G. John Ikenberry, eds., *New Thinking in International Relations Theory*. Boulder, CO: Westview Press.
- Gross Stein, Janice. 1988. 'International Negotiation: A Multidisciplinary Perspective.' *Negotiation Journal* (July).
- Gross Stein, Janice. 1994. 'Political Learning By Doing: Gorbachev as Uncommitted Thinker and Motivated Learner.' *International Organization* 48 (Spring).
- Gunn, G. 1988. 'A Guide to the Intricacies of the Angola-Namibia Negotiations.' *CSIS Africa Notes* 90 (September).
- Gupta, A. 1990. 'Fire in the Sky: The Indian Missile Programme.' *Defense and Diplomacy* 10.
- Gupta, Vipin, and Frank Pabian. 1997. 'Investigating the Allegations of Indian Nuclear Test Preparations in the Rajasthan Desert.' *Science and Global Security* 6.
- Guttieri, Karen, Michael D. Wallace and Peter Suedfeld. 1995. 'The Integrative Complexity of American Decisionmakers in the Cuban Missile Crisis.' *Journal of Conflict Resolution* 39.

- Haas, Ernst B. 1953. 'The Balance of Power: Prescription, Concept or Propaganda?' *World Politics* 5 (July).
- Haas, Peter. 1992. 'Epistemic Communities and International Policy Coordination.' *International Organization* 46 (I).
- Hagerty, Devin. 1995-6. 'Nuclear Deterrence in South Asia: The 1990 Indo-Pakistani Crisis.' *International Security* 20 (Winter).
- Hardgrave, Robert. 1979. 'India: From Crisis to Crisis.' *Current History* 76 (April).
- Harkavy, Robert. 1977. 'The Pariah State Syndrome.' *Orbis* (Fall).
- Harrison, R. 1993. 'What Was Bipolarity?' *International Organization* 47 (Winter).
- Harrison, Selig S. 1994. 'The North Korean Nuclear Crisis: From Stalemate to Breakthrough.' *Arms Control Today* 24 (November).
- Hasnain, Ghulam, and Ajoy Bose. 1998. 'Pakistan Warns of Nuclear Retaliation.' *Sunday Times* (17 May).
- Hayes, Peter. 1993. 'North Korea's Nuclear Battering Ram.' *Nautilus Bulletin* 1 (December).
- Hayes, Peter. 1993. 'North Korea's Nuclear Gambits.' *Director's Series on Proliferation* (7 September).
- Herman, Robert G. 1996. 'Identity, Norms and National Security: The Soviet Foreign Policy Revolution and the End of the Cold War,' in Peter J. Katzenstein, ed., *The Culture of National Security: Norms and Identity in World Politics*. New York: Columbia University Press.
- Herring, Eric. 1991. 'The Decline of Nuclear Diplomacy,' in Ken Booth, ed., *New Thinking About Strategy and International Security*. London: Harper Collins.
- Herrmann, Richard K. James F. Voss, Tanya E. Schooler and Joseph Ciarrochi. 1997. 'Images in International Relations: An Experimental Test of Cognitive Schemata.' *International Studies Quarterly* 41.
- Hersh, Seymour. 1993. 'On the Nuclear Edge.' *The New Yorker* (23 March).
- Herz, John. 1950. 'Idealist Internationalism and the Security Dilemma.' *World Politics* 2.
- Heung-yul, Do. 1996. 'North Korea: Teetering on the Edge?' *Korea Focus* 4 (iv).
- Hibbs, Mark. 1993. 'Pretoria Replicated Hiroshima Bomb in Seven Years, Then Froze Design.' *Nucleonics Week* (May 6).
- Hibbs, Mark. 1993. 'South Africa's Secret Nuclear Program: From PNE to a Deterrent.' *Nuclear Fuel* (May 10).

- Hibbs, Mark. 1993. 'South Africa's Secret Nuclear Program: The Dismantling.' *Nuclear Fuel* (May 24).
- Highfield, Roger. 1993. 'Why Pretoria Owned Up to Nuclear Bombs.' *The Daily Telegraph* (March 25).
- Hinton, Harold C. 1986. 'Korean Security and the Sino-Soviet Relationship.' *Korea and World Affairs* 10 (Winter).
- Holloway, David. 1981. 'Entering the Nuclear Arms Race: The Soviet Decision to Build the Atomic Bomb, 1939-45.' *Social Studies of Science* 11.
- Holsti, K. J. 1984. 'Along the Road to International Theory.' *International Journal* (Canada) 39 (ii).
- Holsti, Ole R. 1995. 'Theories of International Relations and Foreign Policy: Realism and Its Challengers,' in Charles W. Kegley, Jr., ed., *Controversies in International Relations Theory: Realism and the Neoliberal Challenge*. New York: St. Martin's Press.
- Holsti, Ole R. 1991. 'International Systems, System Change, and Foreign Policy: Commentary on "Changing International Systems."' *Diplomatic History* 15 (i).
- Hongyu, Wang. 1995. 'Sino-Indian Relations: Present and Future.' *Asian Survey* 35 (June).
- Hough, M. 1974. 'Selected Excerpts Regarding South Africa's Position on Nuclear Energy.' *Politikon* 1 (ii).
- Howlett, Darryl, and John Simpson. 1993. 'Nuclearization and Denuclearization in South Africa.' *Survival* 35 (iii).
- Howlett, Darryl. 1994. 'Nuclearization and Denuclearization on the Korean Peninsula,' in Colin McInnes and Mark G. Rolls, eds., *Post-Cold War Security Issues in the Asia-Pacific Region*. Essex: Frank Cass.
- Hsieh, Alice Langley. 1964. 'Communist China and Nuclear Force,' in Richard N. Rosecrance, ed., *The Dispersion of Nuclear Weapons: Strategy and Politics*. New York: Columbia University Press.
- Hudson, Valerie M, and Christopher S. Vore. 1995. 'Foreign Policy Analysis Yesterday, Today and Tomorrow.' *Mershon International Studies Review* 39.
- Inglis, D. 1958. 'The Fourth Country Problem: Let's Stop at Three.' *Bulletin of Atomic Scientists* 15.
- Iyengar, P. K. 'Atoms and the Man.' *Island* (March).

- Jackson, Robert H. 1993. 'The Weight of Ideas in Decolonization: Normative Change in International Relations,' in Judith Goldstein and Robert O. Keohane, eds., *Ideas and Foreign Policy: Beliefs, Institutions and Political Change*. Ithaca, NY: Cornell University Press.
- Jackson, R. H., and C. G. Rosberg. 1982. 'Why Africa's Weak States Persist: The Empirical and the Juridical in Statehood.' *World Politics* 35.
- Jackson, R. H., and C. G. Rosberg. 1986. 'Sovereignty and Underdevelopment: Juridical Statehood in the African Crisis.' *Journal of Modern African Studies* 24.
- Jain, Girilal. 1981. 'The Imperative of Staying Ahead.' *World Focus* 2 (June).
- Jasani, Bhupenda. 1994. 'Ukraine's ICBM Arsenal.' *Jane's Intelligence Review* (March).
- Jaster, Robert S. 1984. 'Politics and the "Afrikaner Bomb."' *Orbis* (Winter).
- Jenkins, Simon. 1983. 'Destabilization in Southern Africa.' *Economist* (July 16).
- Jepperson, Ronald L., Alexander Wendt and Peter Katzenstein. 1996. 'Norms, Identity and Culture in National Security,' in Peter Katzenstein, ed., *The Culture of National Security: Norms and Identity in World Politics*. New York: Columbia University Press.
- Jervis, Robert. 1989. 'The Symbolic Nature of Nuclear Politics,' in Robert Jervis, ed., *The Meaning of the Nuclear Revolution*. Ithaca, NY: Cornell University Press.
- Jervis, Robert. 1988. 'The Political Effects of Nuclear Weapons: A Comment.' *International Security* 13 (ii).
- Joeck, Neil. 1997. 'Nuclear Proliferation and Nuclear Reversal in South Asia.' *Comparative Strategy* 16 (September).
- Johnston, Alastair Iain. 1996. 'Cultural Realism and Strategy in Maoist China,' in Peter J. Katzenstein, ed., *The Culture of National Security: Norms and Identity in World Politics*. New York: Columbia University Press.
- Johnston, Alexander. 1991. 'Weak States and National Security: The Case of South Africa in the Era of Total Strategy.' *Review of International Studies* 17.
- Joon, Ahn Byung. 1985. 'The Soviet Union and the Korean Peninsula.' *Asian Affairs* 11 (iv).
- Joon, Kim Hak. 1983. 'The Rise of Kim Chong-il: Implications for North Korea's Internal and External Policies in the 1980s.' *The Journal of Northeast Asian Studies* 2 (June).
- Joong-Gun, Chung. 1993. 'Charisma and Regime Legitimacy: Political Succession in North Korea.' *The Journal of East Asian Affairs* 7 (1).
- Joshi, Ram. 1975. 'The Upsurge in Gujarat.' *Economic and Political Weekly* 9 (August).

- Jung, Monika. 1994. 'The Donbas Factor in the Ukrainian Elections.' *RFE/RL Research Report* 3 (25 March).
- Kang, David C. 1994-5. 'Preventative War and North Korea.' *Security Studies* 4 (Winter).
- Kant, Krishan. 1981. 'Must We Be Taught Another Lesson?' *World Focus* 2 (June).
- Kaplan, Morton A. 1957. 'Balance of Power, Bipolarity, and Other Models of International Systems.' *American Political Science Review* (September).
- Kapstein, Ethan B. 1995. 'Is Realism Dead? The Domestic Sources of International Politics.' *International Organization* 49 (iv).
- Kapur, Ashok. 1971. 'Nuclear Weapons and Indian Foreign Policy: A Perspective.' *The World Today* (September).
- Karp, Aaron. 1984/5. 'Ballistic Missiles in the Third World.' *International Security* (Winter).
- Kasturi, Bhashyam. 1994. 'Military Intelligence in India: An Analysis.' *India Defence Review* 9 (January).
- Katzenstein, Peter J. 1996. 'Taming of Power: German Unification, 1989-1990,' in Meredith Woo-Cumings and Michael Lorriaux, eds., *Past as Prelude: History in the Making of a New World Order*. Boulder, CO: Westview Press.
- Kaufman, M. 1981. 'A-Bomb Race in the Offing.' *New York Times* (30 April).
- Kaul, T. N. 1981. 'We Have Tarried Too Long.' *World Focus* 2 (June).
- Kegley, Charles W. Jr. 1980. 'International and Domestic Correlates of Nuclear Proliferation: A Comparative Analysis.' *Korea and World Affairs* 4 (1).
- Kelly, George A. 1960. 'The Political Background of the French A-Bomb.' *Orbis* 4 (Fall).
- Keohane, Robert O, and Lisa L. Martin. 1995. 'The Promise of Institutional Theory.' *International Security* 20 (i).
- Keohane, Robert O. 1993. 'Institutional Theory and the Realist Challenge After the Cold War,' in David A. Baldwin, ed., *Neorealism and Neoliberalism: A Contemporary Debate*. New York: Columbia University Press.
- Khalizad, Z. 1980. 'Pakistan and the Bomb.' *The Bulletin of Atomic Scientists* (January).
- Khilnani, Niranjana M. 1972. 'The Role of Parliament in Foreign Affairs.' *Journal of Constitutional and Parliamentary Studies* 6 (iv).

- Kier, Elizabeth. 1996. 'Culture and French Military Doctrine Before World War II,' in Peter J. Katzenstein, ed., *The Culture of National Security: Norms and Identity in World Politics*. New York: Columbia University Press.
- Kihl, Young Whan. 1995. 'Confrontation and Compromise on the North Korean Peninsula: The North Korean Nuclear Issue.' *Korean Journal of Defense Analysis* 6 (Winter).
- Kim, Hakjoo. 1995. 'North Korea After Kim Il-song and the Future of North-South Korean Relations.' *Security Dialogue* 26 (i).
- Kim, Hakjoo. 1995. 'On the Nature of the North Korean State.' *Korea and World Affairs* 19 (Winter).
- Kim, Pan Suk. 1994. 'Will North Korea Blink? Matters of Grave Danger.' *Asian Survey* 34 (March).
- Kim, Samuel S. 1995. 'North Korea in 1994: Brinkmanship, Breakdown and Breakthrough.' *Asian Survey* 35 (i).
- Kim, Taeho. 1994. 'Kim Jong-il - North Korea's New Leader.' *Jane's Intelligence Review* (September).
- Kincade, W. H. 1993. 'Nuclear Weapons in Ukraine: Hollow Threat, Wasting Asset.' *Arms Control Today* 23 (July/August).
- King, Peter. 1971. 'How Wide is a Nuclear Threshold? India and the Bomb.' *Australian Outlook* 25 (ii).
- Kiselyov, Sergei. 1993. 'Ukraine: Not So Western After All.' *Bulletin of Atomic Scientists* 50.
- Klotz, Audie. 1996. 'Norms and Sanctions: Lessons from the Socialization of South Africa.' *Review of International Studies* 22.
- Koblentz, Gregory. 1997. 'Theatre Missile Defense and South Asia: A Volatile Mix.' *The Nonproliferation Review* 4 (Spring-Summer).
- Koh, Byung Chul. 1994. 'Confrontation and Cooperation on the Korean Peninsula: The Politics of Nuclear Nonproliferation.' *Korean Journal of Defense Analysis* 6 (ii).
- Kolomayets, Marta. 1994. 'Kravchuk Denies Report of Linkage Between Nukes Transfer and Gas Supply.' *The Ukrainian Weekly* (13 March).
- Kolomayets, Marta. 1994. 'Shmarov Appointed Ukraine's First Civilian Defense Minister.' *The Ukrainian Weekly* (4 September).
- Kolomayets, Marta. 1994. 'Ukraine Receives Security Assurances, Signs Nuclear Non-proliferation Treaty.' *The Ukrainian Weekly* (11 December).

Kolomayets, Marta. 1994. 'Ukrainian Parliament Ratifies NPT But Seeks More Security Guarantees.' *The Ukrainian Weekly* (20 November).

Kowert, Paul and Jeffrey Legro. 1996. 'Norms, Identity and Their Limits: A Theoretical Reprise,' in Peter Katzenstein, ed., *The Culture of National Security: Norms and Identity in World Politics*. New York: Columbia University Press.

Kramer, Martin. 1993. 'Arab Nationalism: Mistaken Identity.' *Daedalus* 122 (Summer).

Kratochwil, Friedrich. 1993. 'The Embarrassment of Changes: Neorealism as the Science of Realpolitik without Politics.' *Review of International Studies* 19.

Kumaraswamy, P. R. 1996. 'Rationalising Narashima Rao: India and Nuclear Non-proliferation.' *Asian Studies Review* 20 (July).

Kuzio, Taras. 1992. 'Ukraine - A New Military Power?' *Jane's Intelligence Review* (February).

Kuzio, Taras. 1994. 'From Pariah to Partner - Ukraine and Nuclear Weapons.' *Jane's Intelligence Review* (May).

Kuzio, Taras. 1994. 'Ukraine's Military Industrial Plan.' *Jane's Intelligence Review* (August).

Kuzio, Taras. 1994. 'Ukraine Since the Elections: From Romanticism to Pragmatism.' *Jane's Intelligence Review* (December).

Kuzio, Taras. 1994. 'Ukrainian Security Fears Justified in Wake of Russian Elections.' *The Ukrainian Weekly* (23 January).

Kuzio, Taras. 1994. 'Will Nuclear Agreement Increase the Security of Ukraine?' *The Ukrainian Weekly* (30 January).

Kuzio, Taras. 1994. 'Ukraine's Arms Exports.' *Jane's Intelligence Review* (February).

Lal, P. C. 1981. 'We Probably Have the Bomb.' *World Focus* 2 (June).

Larrabee, Stephen F. 1994. 'Ukraine: Europe's Next Crisis.' *Arms Control Today* (July-August).

Lavoy, Peter. 1993. 'Nuclear Myths and the Causes of Nuclear Proliferation.' *Security Studies* 2 (iii/iv).

Lavoy, Peter. 1994. 'Civil-Military Relations, Strategic Conduct, and the Stability of Nuclear Deterrence in South Asia,' in *Civil-Military Relations and Nuclear Weapons*. Stanford, CA: Stanford Center for International Security and Arms Control.

- Lavoy, Peter. 1995. 'The Strategic Consequences of Nuclear Proliferation: A Review Essay.' *Security Studies* 4 (Summer).
- Layne, Christopher. 1994. 'Give Democratic Peace A Chance?' *International Security* 19 (ii).
- Lebow, Richard. 1994. 'The Long Peace, the End of the Cold War, and the Failure of Realism.' *International Organization* 48 (Spring).
- Lepingwell, John W. R. 1994. 'Negotiations Over Nuclear Weapons: The Past as Prologue?' *RFE/RL Research Report* 3 (28 January).
- Lepingwell, John W. R. 1994. 'The Trilateral Agreement on Nuclear Weapons.' *RFE/RL Research Report* 3 (28 January).
- Lepingwell, John W. R. 1994. 'Ukrainian Parliament Removes START-1 Conditions.' *RFE/RL Research Report* 3 (25 February).
- Levy, Jack S. 1992. 'An Introduction to Prospect Theory.' *Political Psychology* 13 (ii).
- Levy, Jack S. 1994. 'Learning and Foreign Policy: Sweeping the Conceptual Minefield.' *International Organization* 48 (ii).
- Linklater, Andrew. 1996. 'Rationalism,' in Scott Burchill and Andrew Linklater with Richard Devetak, Matthew Paterson and Jacqui True, *Theories of International Relations*. London: Macmillan.
- Lipson, Charles. 1993. 'International Cooperation in Economic and Security Affairs,' in David A. Baldwin, ed., *Neorealism and Neoliberalism: The Contemporary Debate*. New York: Columbia University Press.
- Little, Richard. 1996. 'Friedrich Gentz: Rationalism and the Balance of Power,' in Ian Clark and Iver B. Neumann, eds., *Classical Theories of International Relations*. London: Macmillan.
- Liu, Leo Y. 1977. 'The Nuclear Policies of China and India.' *International Problems* 16 (iii/iv).
- Lockwood, Dunbar. 1993. 'Ukrainian Rada Ratifies START I, But Adds 13 Conditions for Approval.' *Arms Control Today* (December).
- Lockwood, Dunbar. 1994. 'Kuchma Reverses Field on NPT, Ready to Seek Vote in Parliament.' *Arms Control Today* (September).
- Lockwood, Dunbar. 1994. 'Nuclear Weapon Developments.' *SIPRI Yearbook* 1994. New York: Oxford University Press.
- Macfarlane, S. N. 1983/4. 'Intervention and Security in Africa.' *International Affairs* 11.

- MacFarlane, S. N. 1989. 'The Soviet Union and Southern African Security.' *Problems of Communism* 38 (ii/iii).
- Mack, Andrew. 1991. 'North Korea and the Bomb.' *Foreign Policy* 83 (Summer).
- Mack, Andrew. 1993. 'The Nuclear Crisis on the Korean Peninsula.' *Asian Survey* 33 (April).
- MacLachlan, Ann. 1989. 'U.S. Prods IAEA About Safeguards For North Korean Nuclear Plants.' *Nuclear Fuel* (3 April).
- Mahadevan, T. K. 1981. 'Bomb: The Nation's Shame.' *World Focus* 2 (June).
- Mandela, Nelson. 1993. 'South Africa's Future Foreign Policy.' *Foreign Affairs* 72 (v).
- Mann, Paul. 1994. 'U.S., Ukraine Sign Space Pact.' *Aviation Week & Space Technology* (28 November).
- Mansfield, Edward D., and Jack Snyder. 1995. 'Democratization and the Danger of War.' *International Security* 20 (1).
- Mansourov, Alexandre Y. 1995. 'The Origins, Evolution and Future of the North Korean Nuclear Program.' *Korea and World Affairs* 19 (Spring).
- Marcum, J. 1988. 'Regional Security in Southern Africa.' *Survival* 30 (January-February).
- Marcum, J. 1989. 'Africa: A Continent Adrift.' *Foreign Affairs* 68 (i).
- Markus, Ustina. 1994. 'The Ukrainian Navy and the Black Sea Fleet.' *RFE/RL Research Report* 3 (6 May).
- Marples, David R. 1994. 'Ukraine After the Presidential Election.' *RFE/RL Research Report* 3 (12 August).
- Marushko, Irene. 1996. 'Ukraine: Ukraine Becomes Nuclear Weapons Free Country.' *IAEA Daily Press Review* (4 June).
- Marwah, Onkar. 1977. 'India's Nuclear and Space Programs: Intent and Policy.' *International Security* 2 (ii).
- Masiza, Zondi. 1993. 'A Chronology of South Africa's Nuclear Program.' *The Nonproliferation Review* 1 (1).
- Maslin, Yevgheny. 1993. 'Ukraine Weapons Pose Risk.' *The Independent Russian-American Newspaper* 2 (April/May).
- Mastanduno, Michael, David A. Lake and G. John Ikenberry. 1989. 'Toward a Realist Theory of State Action.' *International Studies Quarterly* 33 (iv).

- Mastanduno, Michael. 1997. 'Preserving the Unipolar Moment: Realist Theories and U.S. Grand Strategy after the Cold War.' *International Security* 21 (iv).
- Mattoo, Amitabh. 1996. 'India's Nuclear Status Quo.' *Survival* 38 (Autumn).
- Mauil, Hanns W. 1994. 'North Korea's Nuclear Weapons Program: Genesis, Motives, Implications.' *Aussenpolitik* (English edition) 45 (iv).
- Mearsheimer, John J. 1990. 'Back to the Future: Instability in Europe After the Cold War.' *International Security* 15 (i).
- Mearsheimer, John J. 1993. 'The Case for a Ukrainian Nuclear Deterrent.' *Foreign Affairs* 72 (iii).
- Mearsheimer, John J. 1994/5. 'The False Promise of International Institutions.' *International Security* 19 (iii).
- Medoff, Rafael, and Mordechai Haller. 1988. 'South Africa in the Mind of Israel.' *National Review* (April 15).
- Mendelsohn, Oliver. 1978. 'The Collapse of the Indian National Congress.' *Pacific Affairs* 51 (i).
- Michelsen, Niall. 1994. 'Presidential Views of Nuclear Trends.' *The Journal of Strategic Studies* 17 (iii).
- Miller, J. 1981. 'Cranston Says India and Pakistan are Preparing for Nuclear Testing.' *New York Times* (28 April).
- Miller, Steven E. 1994. 'The Ukrainian Security Dilemma.' *DACS Seminar*, MIT (November).
- Miller, Steven E. 1994. 'Ukraine's Flawed Nuclear Diplomacy.' *The Nonproliferation Review* 1 (iii).
- Milner, Helen. 1993. 'The Assumption of Anarchy in International Relations Theory: A Critique,' in David A. Baldwin, ed., *Neorealism and Neoliberalism: A Contemporary Debate*. New York: Columbia University Press.
- Minty, Abdul. 1993. 'South Africa: From Apartheid to Democracy.' *Security Dialogue* 24 (i).
- Misra, K. P., and J. S. Gandhi. 1975. 'India's Nuclear Explosion: A Study in Perspectives.' *International Studies* (New Delhi) 14 (iii).
- Mohan, C. Raja. 1980. 'Atomic Teeth to Apartheid: South Africa and Nuclear Weapons.' *Institute for Defense Studies and Analysis* 12 (January-March).

- Mohan, Raja C. 1993. 'India's Nuclear Policy at the Crossroads.' *Director's Series on Proliferation* (7 June).
- Morgan, M. Granger, K. Subrahmanyam, K. Sundarji and Robert M. White. 1995. 'India and the United States.' *Washington Quarterly* 18 (Spring).
- Mouritzen, Hans. 1997. 'Kenneth Waltz: A Critical Rationalist Between International Politics and Foreign Policy,' in Iver B. Neumann and Ole Waever, eds., *The Future of International Relations: Masters in the Making*. London: Routledge.
- Mufson, Steven. 1990/1. 'South Africa 1990.' *Foreign Affairs* 70 (i).
- Muller, Harald. 1991. 'Maintaining Non-Nuclear Weapon Status,' in Regina Cowen Karp, ed., *Security With Nuclear Weapons?* New York: Oxford University Press.
- Munck, Ronaldo, 1994. 'South Africa: The Great Economic Debate.' *Third World Quarterly* 15 (ii).
- Munro, Ross H. 1989. 'Superpower Rising.' *Time* (3 April).
- Munslow, Barry, and Kathryn O'Neill. 1990. 'Ending the Cold War in Southern Africa.' *Third World Quarterly* 12 (iii).
- Nadelmann, Ethan A. 1990. 'Global Prohibition Regimes: The Evolution of Norms in International Society.' *International Organization* 44 (Autumn).
- Nahaylo, Bohdan. 1993. 'The Shaping of Ukrainian Attitudes Towards Nuclear Arms.' *RFE/RL Reports* 2 (19 February).
- Nahaylo, Bohdan. 1994. 'Ukraine.' *RFE/RL Research Reports* 3 (22 April).
- Naik, Naiz. 1994. 'South Asia: The Nuclear Scene,' in Darryl Howlett, ed., *South Asia, Nuclear Energy and Nuclear Non-Proliferation*. Southampton: PPNN.
- Naik, Naiz. 1995. 'NPT Extension and its Implications for South Asia.' *Strategic Perspectives* 3 (Summer).
- Nair, V. K. 1994. 'Nuclear Proliferation in South Asia: US Aims and Indian Response.' *Studies in Conflict and Terrorism* 17 (June).
- Nair, V. K. 1994. 'Strategic Compulsions of Deterrence: An Indian Perspective.' *Indian Defence Review* 9 (July).
- Nair, V. K. 1995. 'CTBT: Instrument for Eliminating Nuclear Weapons or Projection of U.S. Policies?' *AGNI Studies in International Strategic Issues* 1 (November).
- Nair, V. K. 1995. 'Nuclear Proliferation in South Asia: The Military Implications.' *Indian Defence Review* 10 (January-March).

- Nair, V. K. 1995. 'Nuclear Realities - 1995 The Year of the Extension.' *AGNI Studies in International Strategic Issues* 1 (April).
- Nandy, Ashis. 1974. 'Between Two Gandhis: Psychological Aspects of the Nuclearisation of India.' *Asian Survey* 14 (November).
- Nayar, K. 1987. 'We Have the A-Bomb, Says Pakistan's Dr. Strangelove.' *The Observer* (1 March).
- Nayar, K. K. 1995. 'Emerging Areas of Conflict in the Twenty-first Century.' *AGNI Studies in International Strategic Issues* 1 (April).
- Nesbitt, P. 1988. 'Terminators, Crusaders and Gladiators: (Private and Public) Western Support for Renamo and Unita.' *Review of African Political Economy* 43.
- Neumann, Iver B. 1997. 'John Vincent and the English School of International Relations,' in Iver B. Neumann and Ole Waever, eds., *The Future of International Relations: Masters in the Making*. London: Routledge.
- Niksich, Larry. 1992. 'Dealing with North Korea on the Nuclear Weapons Threshold.' *Seminar* 4 (i).
- Noland, Marcus. 1997. 'Why North Korea Will Muddle Through.' *Foreign Affairs* 76 (iv).
- Noorani, A. G. 1967. 'India's Quest for a Nuclear Guarantee.' *Asian Survey* 5 (July).
- Oakley, Robert B., and Jed C. Snyder. 1996. 'Escalating Tensions in South Asia.' *Institute for National Strategic Studies Strategic Forum* 71 (April).
- Oberdorfer, Don. 1991. 'U.S. Decides to Withdraw A-Weapons from South Korea.' *Washington Post* (19 October).
- Okawa, Yoshio. 1995. 'North Korea's Bid to Withdraw from the NPT,' in John Simpson and Darryl Howlett, eds., *The Future of the Non-Proliferation Treaty*. London: Macmillan.
- Ollapally, Deepa, and Raja Ramanna. 1995. 'U.S.-India Tensions: Misperceptions on Nuclear Proliferation.' *Foreign Affairs* 74 (January-February).
- Onuf, N G. 1982. 'Comparative International Politics.' *The Yearbook of World Affairs* 36.
- Onuf, Nicholas G. and Thomas J. Johnson. 1995. 'Peace in the Liberal World: Does Democracy Matter?' in Charles W. Kegley, Jr., ed., *Controversies in International Relations Theory: Realism and the Neoliberal Challenge*. New York: St. Martin's Press.
- Onuf, Nicholas, and Frank F. Klink. 1989. 'Anarchy, Authority and Rule.' *International Studies Quarterly* 33 (ii).
- Ottoway, David B. 1987. 'U.S. Warns Pakistan on Testing Nuclear Device.' *Washington Post* (25 February).

- Owen, John M. 1994. 'How Liberalism Produces Democratic Peace.' *International Security* 19 (ii).
- Oye, Kenneth A. 1985. 'Explaining Cooperation Under Anarchy: Hypotheses and Strategies.' *World Politics* 38 (i).
- Paik, Jin-Hyun. 1993. 'Nuclear Conundrum: Analysis and Assessment of Two Koreas' Policy Regarding the Nuclear Issue.' *Korea and World Affairs* 17(Winter).
- Pande, Savita. 1994. 'Ukraine's "Non-nuclear" Option and the NPT.' *Strategic Analysis* 17 (ii).
- Pant, K. C. 1979. 'India's Nuclear Policy.' *India International Centre Quarterly* 6 (iii).
- Park, Sang Hoon. 1994. 'North Korea and the Challenge to the U.S.-South Korea Alliance.' *Survival* 36 (Summer).
- Pathak, K. K. 1979. 'Nuclear Policy in India: Janata Government's Response.' *Punjab Journal of Politics* 3.
- Patil, R. L. M. 1968. 'South Africa's Nuclear Situation.' *Africa Quarterly* (April-June).
- Paul, T. V. 1995. 'The Paradox of Power: Nuclear Weapons in a Changed World.' *Alternatives* 20 (iv).
- Pavliuk, Oleksandr. 1997. 'Ukraine and Regional Cooperation in Central and Eastern Europe.' *Security Dialogue* 28 (iii).
- Perkovich, George. 1993. 'A Third Nuclear Way in South Asia.' *Foreign Policy* 91 (Summer).
- Perlez, Jane. 1994. 'U.S. and Ukraine Cooperate to Destroy Nuclear Arsenal.' *New York Times* (9 December).
- Pikayev, Alexander. 1994. 'Post-Soviet Russia and Ukraine: Who Can Push the Button?' *The Nonproliferation Review* (Spring/Summer).
- Pikovshek, Viacheslav, and Serhei Skrypnyk. 1991. 'A Ukrainian Army - Utopia or Reality?' *Ukrainian Reporter* 1 (October).
- Pinchukov, Yuri. 1998. 'Disarmament Implications of Russia's Nuclear Weapons Uncertainties.' *Disarmament Diplomacy* (April).
- Plessis, A. du. 1982. 'The Nature, Scope and Implications of Soviet and Cuban Involvement in Angola.' *Strategic Review* (Pretoria) (May).
- Pollack, Jonathan D. 1977. 'China as a Nuclear Power,' in William H. Overholt, ed. *Asia's Nuclear Future*. Boulder, CO: Westview Press.

- Powell, Robert. 1994. 'Anarchy in International Relations Theory: The Neorealist-Neoliberal Debate.' *International Organization* 48 (ii).
- Price, Richard. 1995. 'A Genealogy of the Chemical Weapons Taboo.' *International Organization* 49 (Winter).
- Price, Richard and Nina Tannenwald. 1996. 'Norms and Deterrence: The Nuclear and Chemical Weapons Taboos,' in Peter Katzenstein, ed., *The Culture of National Security: Norms and Identity in World Politics*. New York: Columbia University Press.
- Quester, George H. 1972. 'Some Conceptual Problems in Nuclear Proliferation.' *The American Political Science Review* 66.
- Raghuvanshi, Vivek. 1996. 'India's New Leaders to Fortify Nuke Policy, Heighten Readiness.' *Defense News* 11 (20-26 May).
- Rajan, M. S. 1975. 'India: A Case of Power Without Force.' *International Journal* 30 (ii).
- Rao, R. Rama. 1981. 'Let Us Start Building a Nuclear Arsenal.' *World Focus* 2 (June).
- Ray, James Lee. 1995. 'Promise or Peril? Neorealism, Neoliberalism, and the Future of International Relations,' in Charles W. Kegley, Jr., ed., *Controversies in International Relations Theory: Realism and the Neoliberal Challenge*. New York: St. Martin's Press.
- Reid, T.R. 1992. 'North Korea Reveals Existence of Nuclear Reactor.' *Washington Post* (17 April).
- Reiss, Mitchell. 1995. 'Nuclear Rollback Decisions: Future Lessons?' *Arms Control Today* (July/August).
- Rethinaraj, T. S. Gopi. 1998. 'Indian Blasts Surprise the World, But Leave Fresh Doubts.' *Jane's Intelligence Review* (July).
- Rhodes, Edward. 1994. 'Do Bureaucratic Politics Matter? Some Disconfirming Findings from the Case of the U.S. Navy.' *World Politics* 47 (October).
- Rosenberg, Justin. 1990. 'What's the Matter with Realism?' *Review of International Studies* 16 (iv).
- Rostow, Nicholas. 1995. 'The World Health Organization, the International Court of Justice, and Nuclear Weapons.' *Yale Journal of International Law* 20 (Winter).
- Roy, Denny. 1994. 'North Korea and the "Madman" Theory.' *Security Dialogue* 25 (iii).
- Roy, Denny. 1994. 'The Myth of North Korean Irrationality.' *Korean Journal of International Studies* 25 (ii).
- Roy, Denny. 1996-7. 'North Korea as Alienated State.' *Survival* 38 (Winter).

- Roy, Denny. 1996. 'The "China Threat" Issue.' *Asian Survey* 36 (August).
- Roy, Ramashray. 1973. 'India 1972: Fissure in the Fortress.' *Asian Survey* 13 (February).
- Roy, Ramashray. 1974. 'India 1973: A Year of Discontent.' *Asian Survey* 14 (February).
- Ruban, Volodymyr. 1992. 'Ukraine's Nuclear Doubts.' *Ukrainian Reporter* 2 (January).
- Ruban, Volodymyr. 1992. 'Whatever Happened to the Opposition? The Growing Threat of Authoritarianism in Ukraine.' *Ukrainian Reporter* 2 (February).
- Ruggie, John Gerard. 1983. 'Human Rights and the Future International Community.' *Daedalus* 112 (iv).
- Ruggie, John Gerard. 1995. 'The False Premise of Realism.' *International Security* 20 (i).
- Ruggie, John Gerard. 1997. 'The Past as Prologue? Interests, Identity, and American Foreign Policy.' *International Security* 21 (iv).
- Rumer, Eugene B. 1994. 'Will Ukraine Return to Russia?' *Foreign Policy* 96 (Fall).
- Sagan, Scott D. 1994. 'The Perils of Proliferation: Organization Theory, Deterrence Theory and the Spread of Nuclear Weapons.' *International Security* 18 (iv).
- Sagan, Scott D. 1997. 'Why Do States Build Nuclear Weapons? Three Models in Search of a Bomb.' *International Security* 28 (i).
- Sale, R. 1988. 'India Said to be Building 20 Nuclear Weapons a Year.' *United Press International* (25 April).
- Sanger, David E. 1992. '2 Koreas Agree to A-Inspection by June.' *New York Times* (15 March).
- Sanger, David E. 1992. 'North Korea's A-Bomb Plans Seem Less Perilous.' *New York Times* (18 September).
- Sanger, David E. 1992. 'North Korea Shows Video of Atom Site.' *New York Times* (16 April).
- Sauerwein, Brigitte. 1993. 'Rich in Arms, Poor in Tradition: The Ukrainian Armed Forces.' *International Defense Review* 4.
- Sawant, Sudhir. 1995. 'NPT: India's Policy.' *AGNI Studies in International Strategic Issues* 1 (April).
- Sawhney, R. G. 1987. 'Truth About Brasstacks.' *The Hindustan Times* (28 March).

- Schall, J. V. 1972. 'India Joins the Human Race.' *Worldview* (August).
- Schneider, Barry R. 1994. 'Nuclear Proliferation and Counter-Proliferation: Policy Issues and Debates.' *Mershon International Studies Review* 38.
- Sciolino, Elaine. 1992. 'CIA Chief Says North Koreans Plan to Make Secret Atom Arms.' *New York Times* (26 February).
- Segal, Gerald, and David Mussington. 1994. 'North Korea - Where To From Here?' *Jane's Intelligence Review* (August).
- Segal, Gerald. 1992. 'Managing New Arms Races in the Asia/Pacific.' *Washington Quarterly* 15.
- Shahabuddin, Syed. 1981. 'Morally, An Anathema.' *World Focus* 2 (June).
- Shapley, Deborah. 1978. 'Nuclear Weapons History: Japan's Wartime Bomb Project Revealed.' *Science* 199 (January).
- Sidhu, W. P. S. 1998. 'India Sees Safety in Nuclear Triad and Second Strike Potential.' *Jane's Intelligence Review* (July).
- Sigal, Leon V. 1997. 'The North Korean Nuclear Crisis: Understanding the Failure of the "Crime-and-Punishment" Strategy.' *Arms Control Today* (May).
- Simon, Gerhard. 1994. 'Problems Facing the Formation of the Ukrainian State.' *Assenpolitik* 1.
- Simpson, John. 1998. 'Smoke and Mirrors.' *The World Today* (July).
- Singh, Danesh. 1970. 'The Indian Parliament and Foreign Policy.' *The Parliamentarian* 51 (iii).
- Singh, Jasjit. 1995. 'Arms Race in the Region: Myths and Reality.' *Strategic Analysis* 18 (August).
- Singh, Satinder. 1987. 'Nuclear War in South Asia - The Worst Case.' *Indian Defence Review* (January).
- Singhal, K. C. 1984. 'The Punjab Problem: Its Historical Roots.' *Economic and Political Weekly* (7 April).
- Smith, R. Jeffrey. 1993. 'North Korea Gets More Time to Accept Nuclear Inspections.' *New York Times* (27 February).
- Smith, R. Jeffrey. 1993. 'North Korea Won't Quit Nuclear Ban Treaty.' *Washington Post* (12 June).

- Smith, R. Jeffrey. 1993. 'U.S., North Korea Set High-Level Meeting on Nuclear Program.' *Washington Post* (25 May).
- Smith, R. Jeffrey. 1993. 'Ukraine Begins to Dismantle Nuclear Missiles Aimed at U.S.' *American Forces Information Service* (28 July).
- Smith, Steve. 1987. 'Paradigm Dominance in International Relations: The Development of International Relations as a Social Science.' *Millenium* 16.
- Smith, Steve. 1995. 'The Self Image of a Discipline: A Genealogy of International Relations Theory,' in Ken Booth and Steve Smith, eds., *International Relations Theory Today*. Cambridge: Cambridge University Press.
- Solchanyk, Roman. 1994. 'Crimea's Presidential Election.' *RFE/RL Research Report* 3 (18 March).
- Solchanyk, Roman. 1994. 'Ukraine's Year of Crises.' *The Ukrainian Weekly* (9 January).
- Sole, Donald B. 1986. 'The Rise of Nuclear Sanctions Against South Africa.' *American Review* (Fall).
- Solingen, Etel. 1994a. 'The Domestic Sources of Regional Regimes: The Evolution of Nuclear Ambiguity in the Middle East.' *International Studies Quarterly* 38.
- Solingen, Etel. 1994b. 'The Political Economy of Nuclear Restraint.' *International Security* 19 (ii).
- Solingen, Etel. 1995. 'The New Multilateralism and Nonproliferation: Bringing in Domestic Politics.' *Global Governance* 1 (ii).
- Song, Young Sun. 1991. 'The Korean Nuclear Issue.' *Korea and World Affairs* 15 (Fall).
- Spector, Leonard S. 1992. 'Repentant Nuclear Proliferants.' *Foreign Policy* 88.
- Spector, Leonard, and Jacqueline R. Smith. 1991. 'North Korea: The Next Nuclear Nightmare.' *Arms Control Today* 21 (March).
- Spegele, Roger D. 1987. 'Three Forms of Political Realism.' *Political Studies* 35.
- Spence, J. E. 1971. 'South Africa and the Defence of the West.' *Survival* 13 (iii).
- Spence, J. E. 1981. 'South Africa: The Nuclear Option.' *African Affairs* 80 (October).
- Spiegel, Steven. 1970. 'Bimodality and the International Order: The Paradox of Parity.' *Public Policy* (Winter).
- Spiro, David E. 1994. 'The Insignificance of the Liberal Peace.' *International Security* 19 (ii).

- Starr, Harvey. 1997. 'Democracy and Integration: Why Democracies Don't Fight Each Other.' *Journal of Peace Research* 34 (ii).
- Stein, Arthur. 1993. 'Coordination and Collaboration: Regimes in an Anarchic World,' in David A. Baldwin, ed., *Neorealism and Neoliberalism: The Contemporary Debate*. New York: Columbia University Press.
- Subrahmanyam, K. 1974. 'The Indian Nuclear Explosion and its Impact on Security.' *India Quarterly* 30 (iv).
- Subrahmanyam, K. 1975. 'Foreign Policy Planning in India.' *Foreign Affairs Reports* 24 (i).
- Subrahmanyam, K. 1981. 'Bomb - The Only Answer.' *Times of India* (26 April).
- Subrahmanyam, K. 1981. 'Do We Really Have a Choice?' *World Focus* 2 (June).
- Subrahmanyam, K. 1993. 'Paths to Nuclear Disarmament.' *USI Journal* (April-June).
- Subrahmanyam, K. 1995. 'Legitimising Nuclear Weapons: A Crime Against Humanity.' *Times of India* (28 February).
- Subrahmanyam, K. 1997. 'India: Credible Nuclear Option Global Watch.' *Times of India* (27 June).
- Suh, Dae-Sook. 1993. 'North Korea: The Present and the Future.' *The Korean Journal of Defense Analysis* 5 (Summer).
- Suhr, Michael. 1997. 'Robert Keohane: A Contemporary Classic,' in Iver B. Neumann and Ole Wæver, eds., *The Future of International Relations: Masters in the Making*. London: Routledge.
- Sun-ho, Lee. 1996. 'North Korea's Development of Weapons of Mass Destruction.' *Korea Focus* 4 (ii).
- Tarnowski, Andrew. 1987. 'India "Seriously Concerned" by Pakistan Atom Bomb Report.' *Reuters* (1 March).
- Tenorio, Vyvyan, and Shahid-ur Rehman. 1987. 'Pakistan Denies it has Bomb, but Tensions Rise in India.' *Nucleonics Week* (5 March).
- Tenorio, Vyvyan. 1987. 'India Faces Rising Pressure for Arms Race with Pakistan.' *Christian Science Monitor* (9 March).
- Tetlock, Philip E, Charles B. McGuire, and Gregory Mitchell. 1991. 'Psychological Perspectives on Nuclear Deterrence.' *American Review of Psychology* 42.
- Thakur, Ramesh. 1996. 'India: The Next Nuclear Power.' *Pacific Research* 9 (February).

- Thayer, Bradley A. 1995. 'Nuclear Weapons as a Faustian Bargain.' *Security Studies* 5 (i).
- Thayer, Bradley A. 1995. 'The Causes of Nuclear Proliferation and the Utility of the Nuclear Nonproliferation Regime.' *Security Studies* 4 (iii).
- Thomas, Raju G. C. 1992. 'The Security and Economy of a Reforming India,' in *Asia's International Role in the Post-Cold War Era*. Adelphi Paper No. 276. London: IISS.
- Tickner, Ann J. 1995. 'Revisioning Security,' in Ken Booth and Steve Smith, eds., *International Relations Theory Today*. Cambridge: Polity Press.
- Tkachuk, Viktor, and Serhei Skrypnyk. 1992. 'The Crimean Anomaly.' *Ukrainian Reporter* 2 (May).
- Tolstov, Serhiy, and Oleksandr Potekhin. 1997. 'Ukrainian Foreign Policy, Public Opinion and Political Thought.' *The Ukrainian Review* 44 (Winter).
- Tripathi, K. S. 1985. 'Pak Designs Against India.' *USI Journal* (January-March).
- Tymofyeyev, Igor. 1995. 'Internal Policy, International Security and Nuclear Weapons in Ukraine,' in Theodore A. Coulombis and Thanos P. Dokos, eds., *Arms Control and Security in the Middle East and the CIS Republics*. Athens: ELIAMEP.
- Umbach, Frank. 1994. 'The Security of an Independent Ukraine.' *Jane's Intelligence Review* (March).
- Van Evera, Stephen. 1990/1. 'Primed for Peace: Europe After the Cold War.' *International Security* 3 (iv).
- Vayrynen, Raimo. 1995. 'Bipolarity, Multipolarity, and Domestic Political Systems.' *Journal of Peace Research* 32 (iii).
- Vayrynen, Raimo. 1977. 'South Africa: A Coming Nuclear-Weapon Power?' *Instant Research on Peace and Solence* 7 (i).
- Venter, Denis. 1978. 'South Africa and the International Controversy Surrounding its Nuclear Capability.' *Politikon* 5 (i).
- Viljoen, General C. L. 1983. 'The Scourge of the Civilized World.' *Paratus* (August).
- Vohra, A. M. 1996. 'The Nuclear Weapon Imbroglio.' *Indian Defence Review* 11 (April-June).
- Walker, R. J. B. 1987. 'Realism, Change and International Political Theory.' *International Studies Quarterly* 31 (i).
- Walker, William. 1995. 'Evolutionary Versus Planned Approaches to Nuclear Disarmament.' *Disarmament Diplomacy* 15 (May).

- Walker, William. 1996. 'India's Nuclear Labyrinth.' *The Nonproliferation Review* (Fall).
- Walker, William. 1998. 'International Nuclear Relations After the Indian and Pakistani Test Explosions.' *International Affairs* 74 (July).
- Walters, Ronald. 1979. 'Uranium Politics and U.S. Foreign Policy in Southern Africa.' *Journal of Southern African Affairs* (July).
- Walters, Ronald. 1983. 'The United States and South Africa: Nuclear Collaboration Under the Reagan Administration.' *Transafrica Forum* 2 (Fall).
- Waltz, Kenneth N. 1962. 'Kant, Liberalism and War.' *American Political Science Review* 56 (ii).
- Waltz, Kenneth N. 1964. 'The Stability of the Bipolar World.' *Daedalus* 93 (iii).
- Waltz, Kenneth N. 1967. 'International Structure, National Force, and the Balance of World Power.' *Journal of International Affairs* (Summer).
- Waltz, Kenneth N. 1982. 'Toward Nuclear Peace,' in D. Brito and M. Intrilligator, eds., *Strategies for Managing Nuclear Proliferation*. Lexington, MA: Lexington Books.
- Waltz, Kenneth N. 1990a. 'Nuclear Myths and Political Realities.' *American Political Science Review* 84 (Fall).
- Waltz, Kenneth N. 1990b. 'Realist Thought and Neorealist Theory.' *Journal of International Affairs* 44 (i).
- Waltz, Kenneth N. 1993. 'The Emerging Structure of International Politics.' *International Security* 18 (ii).
- Waltz, Kenneth N. 1996. 'International Politics is Not Foreign Policy.' *Security Studies* 6 (i).
- Wariawalla, Bharat. 1981. 'Wait, Watch, Then Decide.' *World Focus* 2 (June).
- Weber, Steve. 1990. 'Realism, Détente and Nuclear Weapons.' *International Organization* 44 (Winter).
- Weiner, Tim. 1995. 'US Suspects India Prepares to Conduct Nuclear Test.' *New York Times* (15 December).
- Weinraub, B. 1985. 'US Concerned on Atom Peril in Subcontinent.' *New York Times* (13 September).
- Weisman, Steven R. 1987. 'Pakistan's Nuclear Aims Worrying U.S.' *New York Times* (20 February).

- Weltman, John J. 1981/2. 'Managing Nuclear Multipolarity.' *International Security* 6 (iii).
- Wendt, Alexander, and Michael Barnett. 1993. 'Dependent State Formation and Third World Militarization.' *Review of International Studies* 19.
- Wendt, Alexander. 1992. 'Anarchy is What States Make of it: The Social Construction of Power Politics.' *International Organization* 46 (ii).
- Wendt, Alexander. 1995. 'Constructing International Politics.' *International Security* 20 (i).
- Whymant, Robert. 1992. 'North Korea Defector Exposes Nuclear Ruse.' *Daily Telegraph* (10 April).
- Williams, Michael C. 1993. 'Neorealism and the Future of Strategy.' *Review of International Studies* 19.
- Wilson, Andrew. 1991. 'Separatism in Ukraine.' *Ukrainian Reporter* 1 (December).
- Wilson, Andrew. 1994. 'The Election in Crimea.' *RFE/RL Research Reports* 3 (24 June).
- Wilson, Andrew. 1994. 'Ukraine: the Economy,' in *Eastern Europe and the CIS 1994: A Political and Economic Survey*. London: Europa Publications.
- Wind, Marlene. 1997. 'Nicholas Onuf: The Rules of Anarchy,' in Iver B. Neumann and Ole Waever, eds., *The Future of International Relations: Masters in the Making*. London: Routledge.
- Wise, Michael Z. 1992. 'North Korea Signs Agreement for Inspection of Nuclear Sites.' *Washington Post* (31 January).
- Wohlforth, William C. 1994/5. 'Realism and the End of the Cold War.' *International Security* 19 (iii).
- Wolfsthal, Jon B. 1994. 'U.S., North Korea Sign Accord On Resolution of Nuclear Crisis.' *Arms Control Today* (September).
- Woronowycz, Roman. 1994. 'Kravchuk Says U.S. Trip Could Mark "Turning Point" in Bilateral Relations.' *The Ukrainian Weekly* (6March).
- Woronowycz, Roman. 1994. 'Shmarov Notes Progress on Nukes and Cooperation in Space Program.' *The Ukrainian Weekly* (22 May).
- Yager, Joseph A. 1989. 'Nuclear Nonproliferation Strategy in Asia.' *CNSN Paper* 1 (July).
- Young, Michael D. and Mark Schafer. 1998. 'Is There Method in Our Madness? Ways of Assessing Cognition in International Relations.' *Mershon International Studies Review* 42 (May).

Zaborsky, Victor. 1996. 'Ukraine Nuke Policy Struggle Continues Over Fate of ICBMs.' *Defense News* (18-24 November).

Zacher, Mark W. and Richard A. Matthew. 1995. 'Liberal International Theory: Common Threads, Divergent Strands,' in Charles W. Kegley, Jr., ed., *Controversies in International Relations Theory: Realism and the Neoliberal Challenge*. New York: St. Martin's Press.

Zaloga, Steven J. 1992. 'Armed Forces in Ukraine.' *Jane's Intelligence Review* (March).

Zhongni, Zhu. 1994. 'South Africa: Rebirth with a Promising Future.' *Contemporary International Relations* 4 (v).

Zlenko, Anatoly. 1993. 'Ukrainian Security and the Nuclear Dilemma.' *NATO Review* (August).

Zlenko, Anatoly. 1994. 'The Foreign Policy of Ukraine: Principles Shaping and Problems of Implementing It.' *International Affairs* (January).

Zoppo, Ciro Elliot. 1966. 'Nuclear Technology, Multipolarity and International Stability.' *World Politics* (July).