

**THE LONDON SCHOOL OF ECONOMICS
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**The 1996 Comprehensive Test Ban Treaty: A Study in Post
Cold War Multilateral Arms Control Negotiations**

by

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Doctor of Philosophy

**Department of International Relations
The London School of Economics and Political Science
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Abstract

A Comprehensive Test Ban Treaty (CTBT) had been on the arms control agenda since 1954, the subject of intermittent bilateral or trilateral talks that achieved only partial measures. The end of the Cold War provided renewed public pressure and political impetus for banning nuclear explosions. This thesis analyses the context and processes of the multilateral test ban negotiations that opened in the Conference on Disarmament in 1994.

Combining participant-observation and contemporaneous notes with extensive use of documentary sources, unpublished materials and interviews, the study explores the dynamics of the CTBT negotiations in light both of regime theory and post cold war concepts of multilateralism, highlighting the role of civil society actors as well as states. Providing historical background and rich detail on the negotiating process from 1994-1996, the thesis examines the causal factors, strengths and weaknesses of the outcomes in four key areas: prenegotiations, scope, verification and entry into force.

Focusing on the strategies and mechanisms by which actors with competing expectations and interests reached agreement, two types of convergence are explored: distributive, encompassing both imposed and managed divisions of gains and losses; and integrative, in which expectations of what would constitute an acceptable agreement are expanded or changed through cognitive strategies and the shaping of norms and interests.

The thesis shows that whilst sharing a general objective of a CTBT, governments had significantly different views on what a test ban should encompass and accomplish, particularly with respect to broader concepts of nonproliferation and disarmament. While nuclear interests played a major role in determining a state's expectations and negotiating posture, other factors were important in reaching convergence. These included: knowledge and ideas; civil society engagement; norms and regime values; partnerships and alliances; internal policy cohesion or division; and the level of domestic and international political attention and support. By choosing to incorporate transnational civil society as a principal unit of analysis, along with states, the thesis contributes to a fuller understanding of how governments' calculations of what constitutes self-interest and security can be influenced and shaped, opening up alternative solutions for agreement than might have been initially envisaged.

Contents

Table of Contents	3
Acknowledgements	7
Acronyms and Abbreviations	8
Chapter 1 Introduction: Approach, Concepts and Methodology	10
Three Approaches to Multilateral Theory	15
Methodology, Legitimacy and Limits	21
Thesis Outline	26
Chapter 2 Multilateralism and Nuclear Diplomacy	37
Seeking Convergence	37
Knowledge, Norms and Ideas: Post Cold War Concepts of Civil Society	40
States and Multilateral Nuclear Arms Control	45
Nuclear Capabilities and Interests	48
The Conference on Disarmament	51
Consensus	52
The CD's Cold War Group System	54
Multilateral Negotiations as a Process of Regime Formation	56
Bargaining Power and Convergence Strategies and Tactics	58
Power in shaping outcomes	58
Convergence Strategies and Tactics	59
Chapter 3 Cold War Arms Control: The Thwarted Test Ban	72
Settling for the Partial Test Ban Treaty, 1949-1963	74
How Testing Went Underground	79
Nonproliferation, Arms Control and Testing Talks, 1964-1980	82
The Nuclear Nonproliferation Treaty	82
Détente and Arms Control	84
Tripartite Testing Talks, 1977-1980	86
Good Intentions Lacking Authority	87
Cold War Brinkmanship, 1981 to 1989	89
Nuclear testing, disarmament and nonproliferation	93
Chapter 4 Bringing States to the Negotiating Table: Civil Society and the Construction of Political Will	106
Prenegotiations	107
Putting Testing Back on the Agenda	109
A CTB Warning Shot Across the NPT Bow	110
Making the Test Sites Publicly Visible	111
Parliamentarians and NGOs: the PTBT Amendment Conference	113
From Visibility to Moratoria	114
The US Moratorium: Legislative Strategy and Public Pressure	117
From Moratoria to Negotiating Mandate	118
Changing Minds and Policies: Evaluating Civil Society's Role	121

Chapter 5 The Process of Negotiations, 1994-1996:	
From Mandate to Signature	129
Adopting a Negotiating Mandate	129
1994: The “Year of the Questionnaire”	130
Opening Positions: Target Dates	131
Opening Positions: Substance and Approach	133
P-5 Dynamics	135
Thwarting an Early Chair’s Text	138
The First Rolling Text	140
1995: Testing and Tidying	142
Opting Out of the 10-year Opt-Out	143
NPT Agreements and Testing	145
France Breaks its Moratorium	148
Breakthrough on Zero Yield	151
Gains, Losses and Shifts in 1995	152
Zero Yield Aftermath	154
India Prepares to Test	155
DOE Announces US Subcritical Tests	156
1996: Conflict and Chaos as Negotiations are Finalised	157
Configuring the Endgame	158
India: Raising the Stakes or Moving the Goalposts?	160
Critical Adjustment: Russia, Pakistan et al	162
Draft Treaties from Iran and Australia	163
March 28: Chair’s ‘Outline’	166
May 28: Chair’s First Draft	167
June 20: The Die is Cast	169
June 28: ‘Final’ Text	172
The Preamble	174
The CTBT Organisation (CTBTO)	175
Bypassing India’s Veto	176
The United Nations Adopts the Treaty	178
September 24: Open for Signature	179
 Chapter 6 Scope: What Kind of Test Ban?	 192
Opening Positions: Banning Which Bangs?	193
The Franco-British Alliance on Safety Tests	198
Low Yields and Competing Thresholds	200
Ambivalence hardens into Opposition	201
The Push to Zero	209
Bypassed and Disgruntled: Reluctant P-5 Acquiescence	214
‘Peaceful’ Nuclear Explosions?	216
Linking PNE with Development	217
Thwarting Russian and Iranian Compromises	218
The Canadian-Chinese Solution	222
Much More than a Managed Compromise	224
 Chapter 7 Verification: Detection, Deterrence and Bearability	 235
Conceptualising CTBT Verification	238
The International Monitoring System	242
The Seismic Signature	245

Detecting Airborne Radioactivity	246
‘Hearing’ Underwater Explosions	248
Sensing Nuclear Shockwaves	248
Leaving out Satellites and EMP	249
Interpreting IMS Data	249
On-Site Inspections	251
Background	253
Intrusion –v- Protection: the Underlying Questions	254
Transparency	256
Phased Inspections, Decisionmaking and Access	258
National Technical Means	261
OSI: A Make or Break Issue	263
Concessions and Trade-offs: Making the Adequate Bearable	266
 Chapter 8 Entry into Force: Too Rigid, Too Rushed	 280
General Considerations for Entry into Force	281
Marking out the Territory	283
Stringent Conditions and Bypass Mechanisms	284
Battle is Joined between the P-5 and D-3	286
Attempts to Manage the Conflict	290
The June 20 Watershed	296
Confusion and Haste	299
Misperception and Intransigence	302
 Chapter 9 Expectations, Interests and Multilateral Convergence: Considerations and Conclusions	 309
Nuclear Weapons, Programmes and Perceptions of National Interest	310
Dynamics of Convergence	314
Prenegotiations	315
Scope	318
Verification	324
Entry into Force	327
Conclusions	328
 Appendix The Comprehensive Nuclear Test-Ban Treaty	 338
Preamble	338
Article I Basic Obligations	339
Article II The Organization	339
A: General Provisions	339
B: Conference of the States Parties	340
C: The Executive Council	342
D: The Technical Secretariat	345
E: Privileges and Immunities	347
Article III National Implementation Measures	348
Article IV Verification	348
A: General Provisions	348
B: The International Monitoring System	351
C: Consultation and Clarification	354

D: On-Site Inspections	355
E: Confidence-Building Measures	360
Article V Measures to Redress a Situation and to Ensure Compliance, Including Sanctions	360
Article VI Settlement of Disputes	361
Article VII Amendments	361
Article VIII Review of the Treaty	363
Article IX Duration and Withdrawal	363
Article X Status of the Protocol and Annexes	364
Article XI Signature	364
Article XII Ratification	364
Article XIII Accession	364
Article XIV Entry into Force	364
Article XV Reservations	365
Article XVI Depositary	365
Article XVII Authentic Texts	366
Annex I to the Treaty: List of States Pursuant to Article II Paragraph 28	366
Annex II to the Treaty: List of States Pursuant to Article XIV	367
Protocol to the Comprehensive Nuclear Test-Ban Treaty	367
Part I The International Monitoring System and International Data Centre Functions	367
Part II On-site Inspections	372
Part III Confidence-Building Measures	388
Annex 1 to the Protocol	389
Annex 2 to the Protocol	403
Bibliography	404
A. Primary Sources	404
Other General Documentary Sources	405
B: Secondary Sources	406
Articles and Reports	406
Books	414

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Acronyms and Abbreviations

ABM (T)	Anti-Ballistic Missile (Treaty, 1972)
ACA	Arms Control Association (US)
ACDA	Arms Control and Disarmament Agency (US)
AW(R)E	Atomic Weapons (Research) Establishment (UK)
BASIC	British American Security Information Council (US/UK)
BWC	Biological and Toxin Weapons Convention (1972)
CEA	<i>Centre d'Energie Atomique</i> (France)
CCW	Convention on Certain (Inhumane) Conventional Weapons (1981)
CD	Conference on Disarmament
CND	Campaign for Nuclear Disarmament (UK)
CTB(T)	Comprehensive [Nuclear] Test Ban (Treaty)
CWC	Chemical Weapons Convention (1993)
D-3	<i>Defacto</i> nuclear weapon possessors (India, Israel and Pakistan)
DAM	<i>Direction des applications militaires</i> (France)
DOE	Department of Energy (DOE)
DPRK	Democratic People's Republic of Korea (North Korea)
EDM	Early Day Motion (UK, parliamentary)
END	European Nuclear Disarmament
ENDC	Eighteen Nation Disarmament Committee
EU	European Union
FCO	Foreign and Commonwealth Office (UK)
FMCT	Fissile Material Cut-Off Treaty
FMT	Fissile Material Treaty
G-21	Group of Non-Aligned States at the CD
GSE	Group of Scientific Experts to Consider International Co-operative Measures to Detect and Identify Seismic Events
IAEA	International Atomic Energy Agency
ICBL	International Campaign to Ban Landmines
ICJ	International Court of Justice
IDC	International Data Centre
INF	Intermediate Nuclear Forces (Treaty, 1987)
IPPNW	International Physicians for the Prevention of Nuclear War
HEU	Highly-enriched Uranium
HNE	Hydronuclear Experiment
HDE	Hydrodynamic Experiment
JCS	Joint Chiefs of Staff (US)
kg	kilogram
Kr	Krypton
kt	kiloton (1,000 tons TNT equivalent, used in nuclear yield measurement)
Minatom	Ministry of Atomic Affairs (USSR and Russia)
MoD	Ministry of Defence (UK)
NAM	Non-Aligned Movement/Nonaligned Movement
NAS	National Academy of Sciences (US)
NATO	North Atlantic Treaty Organisation

NAC	New Agenda Coalition (Brazil, Egypt, Ireland, Mexico, New Zealand, Sweden and South Africa)
NDC	National Data Centre
NGO	Nongovernmental Organisation
NPT	Treaty on the Non-Proliferation of Nuclear Weapons/Nuclear Non-Proliferation Treaty (1968)
NRDC	Natural Resources Defense Council (US)
NSA	Negative Security Assurances
NSM	Nevada-Semipalatinsk Movement (USSR)
NTM	National Technical Means
NWFZ	Nuclear Weapon Free Zone
NWS	Nuclear Weapon States
NNWS	Non Nuclear Weapon States
OPANAL	<i>Organismo para la Proscripcion de las Armas Nucleares en la America Latina</i> – Treaty of Tlatelolco implementing organisation
OPCW	Organisation for the Prohibition of Chemical Weapons
OSI	On-Site Inspections
P-5	Permanent Five — the five nuclear-weapon states which are also the permanent members of the UN Security Council (China, France, Russia, United Kingdom and United States)
PAROS	Prevention of an Arms Race in Outer Space
PGA	Parliamentarians for Global Action
PNE	Peaceful Nuclear Explosion
PRIF	Peace Research Institute, Frankfurt
PSR	Physicians for Social Responsibility (US)
PTBT	Partial Test Ban Treaty (1963)
SALT	Strategic Arms Limitation Talks/Treaty (I and II)
SAS	Soviet Academy of Sciences (USSR)
SDI	Strategic Defense Initiative (US)
SIOP	Single Integrated Operations Plan (US)
SIPRI	Stockholm International Peace Research Institute
SOFAR	SOund and FAR range (channel)
SPF	South Pacific Forum
START	Strategic Arms Reduction Talks/Treaty (I and II)
t	ton/tonne (TNT equivalent nuclear yield measurement)
T-BAG	Test Ban Action Group (UK)
TIA	Transparency in Armaments
UK	United Kingdom of Great Britain and Northern Ireland
UN (GA)	United Nations (General Assembly)
UNSC	United Nations Security Council
US	United States of America
USSR	Union of Soviet Socialist Republics
VERTIC	Verification Technology Information Centre
WILPF	Women's International League for Peace and Freedom
WMD	Weapons of Mass Destruction
Xe	Xenon

Chapter One

Introduction: Approach, Concepts and Methodology

In 1978, the United Nations Special Session on Disarmament stated: *“All the peoples of the world have a vital interest in the success of disarmament negotiations. Consequently, all States have the duty to contribute to efforts in the field on disarmament negotiations. All States have the right to participate in disarmament negotiations. They have the right to participate on an equal footing in those multilateral disarmament negotiations which have a direct bearing on their national security.”*¹

Whatever the ‘rights’ expressed in this consensus proclamation from the UN Special Session, the reality is rather different. States do not participate on an equal footing. They enter into multilateral negotiations with different expectations and interests; some have a vast population, others a few thousands; some are much greater military or economic powers than others; where nuclear weapons are concerned five are declared weapons states, while three more are assumed to be in possession and others are suspected of having ambitions or aspirations; others, still, may have abjured such weapons or technology and want to see them eliminated altogether. The perceived security needs of states are different and they enter multilateral negotiations with different expectations of what they will achieve. Some seek not disarmament, the elimination of a class of weapons across the board, but nonproliferation – promoted during the cold war by the dominant nuclear weapon states (NWS) to limit the number of nuclear weapon possessors to five ‘haves’.² Given the potential permutations of complexity and uncertainty and the “vast number of potential roadblocks” possible in negotiated interactions among a large number of parties, it is necessary to go behind the UN rhetoric and pose Fen Hampson’s key question: how and why is it possible for multilateral negotiations ever to succeed?³

The subject of this thesis is the comprehensive nuclear test ban treaty (CTBT), but the research focus is not the treaty’s substance or attributes *per se*, but the multilateral test ban negotiations in the Conference on Disarmament (CD), Geneva, from 1994-1996. The aim is twofold: to put into the public arena a richly detailed analysis of

how post cold war multilateral negotiations were conducted in the case of nuclear testing; and to contribute to a better understanding of the dynamics, strategies and limitations of convergence in an arms control context where the negotiators' perceptions of the treaty's purpose were conditioned by their different interests and expectations, particularly with regard to the regime objectives of nonproliferation and disarmament.

Whilst relatively little theoretical work has been done on multilateralism, regime theory provides a conceptual starting point. Though generally understood as collective security arrangements, diplomats have long used the terms "nonproliferation regime(s)" or "security regime(s)" to cover varying shades of meaning on the theme of "networks of treaties, agreements and organisations".⁴ In the foundational work of regime theory, Stephen Krasner defined regimes more specifically as "sets of implicit or explicit principles, norms, rules, and decision-making procedures around which actors' expectations converge in a given area of international relations".⁵ This thesis focuses on multilateral negotiations as a process for reaching convergence in order to establish and codify those principles, norms, rules and decision-making procedures in a treaty.⁶ In detailed chapters devoted to prenegotiations, scope, verification and entry into force, the study analyses the factors and dynamics that shaped particular outcomes in relation both to the expectations and strategies of particular state and nonstate actors and the broader framework of regime formation and multilateralism.

The CTBT, which headed the agenda of the CD (or its predecessors) for decades, was finally concluded in August 1996, following three years of intensive multilateral negotiations. The treaty text banned all nuclear weapon test explosions and all nuclear explosions, allowing for no thresholds or exceptions above an agreed zero yield, for any reason, civilian or military.⁷ It established a verification organisation co-located with (but independent from) the International Atomic Energy Agency (IAEA) in Vienna, to oversee a worldwide international monitoring system (IMS). It planned for a regionally balanced executive council of 51 states to take decisions on matters such as inspections at the site of an ambiguous event or suspected nuclear explosion, as well as determining whether to accuse a state of violating the treaty and resolving questions of noncompliance.

Though the treaty text was painstakingly worked on by all the relevant states and managed to satisfy the governments of the five major nuclear weapon states, the CD was unable to adopt its finalised treaty because one member state – India – blocked consensus. India, which had conducted a nuclear explosion in 1974, was not a nuclear weapon state by definition, but was widely regarded as seeking that status and of having de facto nuclear weapons capabilities. India was able to veto the treaty in the CD, which works according to a rule of consensus, but was outmanoeuvred politically when a group of countries led by Australia bypassed the CD and took the treaty in their own name to the United Nations (UN) General Assembly in New York, where it was overwhelmingly adopted, by 158 votes to three (India, Bhutan and Libya), with five abstentions. The CTBT was opened for signature on September 24, 1996, but despite having been signed by more than 160 countries and ratified by more than 100, the treaty has not, at time of writing, entered into force. Moreover, signature or ratification by several of the states necessary for it to enter into force look further away than ever. These include the United States, where a Republican majority in the Senate rejected ratification when it came up in 1999, and India and Pakistan, which each conducted a series of underground nuclear tests in May 1998.

In considering the factors that enabled states with competing expectations and interests to converge and conclude the CTBT, the thesis also seeks to shed light on ways in which the construction of convergence can result in managed compromises that are so suboptimal (what Krasner, drawing from game theory, calls “below the Pareto frontier”⁸) that, despite diplomatic characterisation of the negotiations as successful, the viability or implementation of the primary objective – in this case the treaty – is left in serious doubt.

Arms control and disarmament are more generally understood to encompass controls, limitations and reductions of armaments, or the elimination and prohibition of types of weapons. Banning nuclear testing,⁹ by contrast, focuses on an activity associated with the research and development of a weapon, not the weapon itself. Testing is no longer essential for making nuclear weapons, but it is important for sophisticated, missile deliverable designs and modernisation. Its role in enabling further horizontal and vertical proliferation of nuclear weapons means that a test ban is seen as an

important measure of disarmament as well as arms control. To establish some context for the thesis, the following practical questions are relevant. After five decades and some 2048 nuclear tests¹⁰, why did the five nuclear powers agree to negotiate away their legal freedom to conduct underground nuclear explosions for the testing and development of existing and future nuclear weapons? Why were they willing to sign up to this test ban in 1996, when India, a long-time publicly declared opponent of nuclear weapons and testing, was not? What were the expectations of the different negotiating parties and how did they view the role and value of a CTBT, especially with regard to nonproliferation, arms control, disarmament and international security? How were different negotiating postures and the outcome of the negotiations influenced by a state's interests in the possession or acquisition of nuclear weapons?

One way to look for answers might be to study the policy-making process and governmental debates within the major countries. Undoubtedly, each player engaging in multilateral negotiations has domestic pressures and expectations, policy-making processes and, quite probably, rival or competing domestic interests and agencies. Understanding these is important for international relations, but while there is already a wealth of literature on intergovernmental debates and the processes of policy-formation and decision-making in certain countries,¹¹ very few studies have paid serious attention to the ways in which negotiations were conducted in the international arena, and even fewer have analysed multilateral arms control.¹²

Multilateralism involves many more players than traditional studies are used to considering: the larger the number of players, the greater the domestic permutations that would have to be taken into account, even if consideration were given only to the government debates of a few major states. Such a study would undoubtedly be worthwhile, but it is not the purpose of this thesis. By focusing on the players and processes in the international forum rather than in their domestic and policy-forming interactions, this study of the CTBT does not seek to privilege the dynamics of multilateral negotiations above these other factors in determining outcomes, but rather to illuminate an underdeveloped subject of political importance, and so contribute to a better overall understanding of how multilateral arms control functions in reality.¹³

The first decade after the end of the cold war is of particular interest to studies of arms control and multilateralism as it was a period of transition in international relations. It was also during this period that 'civil society' returned to the research agenda, as analysts and academics sought to understand the disintegration of the Soviet bloc in the late 1980s and the rise of influential pressure groups of diverse citizens in issues as wide-ranging as trade, human rights, dam construction and environmental protection.¹⁴ Though the term had long been deployed by Marxists¹⁵, the concept of civil society has undergone significant theoretical transformation over the past 15 years, as academics, analysts and the UN system came to recognise that the participation of nonstate actors is not confined to organisations, and that traditional assumptions about NGOs were too limited.¹⁶ Civil society was chosen as one of the research themes because it is of increasing importance in UN and academic circles while poorly represented as a research category in arms control, notwithstanding the burgeoning treatises in other areas of international relations. Writing on the role of civil society in achieving the Mine Ban Treaty during the same period as this thesis (the 1990s), Richard Price noted: "the security policies of states represent, *prima facie*, a particularly hard case for demonstrating the role of transnational nonstate actors... [because] conventional wisdom assumes that the high politics of security policy is where the state ought to be the most autonomous from society at large and able to set its sights on military imperatives relatively independent of societal pressures."¹⁷ In short, studies of civil society have tended to leave out arms control and studies of arms control have tended to leave out civil society.

The significance of civil society for the CTBT was underscored when UN Secretary-General Boutros Boutros Ghali opened the treaty for signature in September 1996 and formally saluted "all those officials in governments and citizens who have struggled for so long to achieve this treaty".¹⁸ Two interesting studies into the role of scientists in cold war efforts to achieve a CTBT during the 1950s and 1960s had contributed to theories about epistemic communities and norm entrepreneurs, providing more fertile ground for analysis.¹⁹ Whilst fully acknowledging that the very concept of civil society is contested in international relations, as discussed further in Chapters 2 and 4, the lack of solid research into the strategies and impact of civil society in arms

control, combined with Boutros Ghali's public acknowledgement and my own observations of the different kinds of ways by which civil society influenced the CTBT negotiations made it logical to explore the role of these nonstate actors as well as states.

The paucity of in depth studies into either multilateral arms control or the strategies and impact of civil society in weapons-related issues is evidence of their relative neglect in international relations: by contrast, the field is well stocked with studies of state behaviour (especially in bilateral arms control) and domestic policy formation, or, as noted above, the role of civil society in a range of softer global issues. Such studies seldom focused on the dynamics of the negotiations *per se*, but rather the debates within governments and the personalities, bureaucracies and political interests on each side that contributed to policy-formation and carried out the instructions at the negotiating table. The principal exception, mentioned above, has been the 1997 Mine Ban Treaty, about which much has been written in recent years; but although considerable emphasis has been placed on the role of civil society in banning landmines, it is invariably pointed out that a major factor in their success was their framing of the issue in humanitarian rather than arms control or disarmament terms.²⁰ Moreover, although a case can be made for the military utility of landmines, they hardly compare to the strategic value accorded to nuclear weapons.

Three Approaches to Multilateral Theory

As already noted, relatively little theoretical work has been done on the concept or processes of multilateralism, but some parallels can be drawn with regime theory. Developed during the 1980s to address questions relating to international cooperation and security, the major schools of thought in regime analysis derive from the theoretical frameworks of realism and Grotian neoliberalism.²¹ Whilst sharing the positivist, rational choice assumptions about state behaviour that underpin regime analysis, realism and neoliberalism posit somewhat different models of how the world works, and the determining role of structure and power, as well as the significance of state and nonstate actors, and the influence of agent-centred processes such as bargaining, learning and institution-building. A third, post cold war approach to multilateralism, spearheaded by Robert Cox and Michael Schechter, has no corresponding regime-theoretic basis, but is instead associated with theories of global

governance. Although it is not necessary for this thesis to give a systematic theoretical analysis of these three approaches to multilateralism, their principal underlying assumptions are relevant in providing a conceptual context for studying multilateral negotiations.

Realists, who frame the world in terms of sovereign states competing to maximise their power and individual security, characterise the international arena as ‘anarchic’ because it lacks any overarching political authority. They understand multilateralism as a mechanism through which states that rely on self help can cooperate on the basis of temporarily shared interests.²² The realist state is deemed to be an individualistic, coherent unit, capable of applying rational calculations to the available information to secure its survival, pursue its interests and increase its relative power.²³ While it is recognised that a variety of domestic actors contribute towards determining a state’s policies, a centralised political authority enables these disparate influences to be unified and thereby the state represents the collective will and interests of its citizens.²⁴

By realist reasoning, states will seek cooperation with others only where coordinating their policies appears to be the most rational means of aggrandising their power or avoiding the greater insecurity of a free-for-all in the Hobbesian bear pit. The very forces of “autonomously calculated self-interest that lie at the root of the anarchic international system also lay the foundation for international regimes... there are times when rational self-interested calculation leads actors to abandon independent decision-making in favour of joint decision-making.”²⁵ In accordance with Arthur Stein’s distinction between regimes established to deal with questions of common interest (to achieve relative gains) and regimes for resolving dilemmas of common aversions (such as insecurity due to the proliferation of nuclear weapons), realists accept the need for multilateral coordination under certain circumstances.²⁶ Assuming cooperation as conditioned by the relative power and interests of asymmetric actors, realists expect multilateral negotiations to be both a tool and a reflection of the interests of dominant states. The “distribution of power between states determines the context of interaction and the preference orderings of the interacting states and thus determines the incentives and prospects” of multilateral negotiations.²⁷ The processes and products of multilateralism are expected to yield

differential benefits, with the more powerful states ensuring that their significant interests are met. However, even when rational actors would all benefit from cooperating, they are not necessarily able to do so. Failure to cooperate in rationally beneficial circumstances arises not just from what Kenneth Waltz called the “interference” of political interventions and social customs,²⁸ but may be inherent in the structure of the interaction, as exemplified by the negotiations on scope and entry into force.

Realists would not expect multilateralism to provide long term solutions for collective action, though theorists of hegemonic stability argue that this would be more likely if the framework and payoff structure of the multilateral interaction were underpinned by hegemonic leadership. In this case, multilateralism would operate in accordance with the hegemon’s interests.²⁹ States would engage in multilateral negotiations, agreements or regime formation either to further their interests (achieve relative gains) or because non-participation would entail relative losses. Realism accords little value to the activities of civil society, assumed to be an epiphenomenon of marginal influence on the state system.³⁰ Engaging in multilateral negotiations carries no particular expectation or connotation of justice, equality or fairness in international decisionmaking, although those ideals might be promoted as incentives in order to secure the cooperation of others. With the exception of the so-called ‘liberal realists’, who introduced norm-governed limits to states’ pursuit of power and interests and posited a state-centric ‘international society’, realists have difficulty with the normative element in multilateralism implied in modern diplomatic usage.³¹

Norm-based regimes presented less of a problem to neoliberal institutionalism, centred around a group of American analysts and policy shapers, such as Joseph Nye, Robert Keohane and John Ruggie. Like realists, neoliberals operate from the theoretical assumption that states can be treated as unitary, rational actors pursuing their interests in an anarchic international system.³² Where realists saw the anarchy *problematique* in terms of power distribution and perpetually competing individualised states, neoliberals developed a theory of complex interdependence in which power was more diffused.³³ Following from this conceptualisation of world order, a further important difference between neoliberals and realists is the role they assign to other actors and to institutions in facilitating and sustaining cooperation. In

effect, as Joseph Grieco summarised it, neoliberals “basically argue that even if the realists are correct in believing that anarchy constrains the willingness to cooperate, states nevertheless can work together and can do so especially with the assistance of international institutions.”³⁴ Though neoliberals view multilateral negotiations as essentially taking place among states, other actors such as transnational corporations, international and national NGOs and interest groups are seen to play a constitutive role in shaping states’ interests and influencing the conditions for cooperation. Extrapolating from regime analysis, realists would consider the institution and practices of multilateralism to be the product of the participating states’ power and interests, capable of being weakened or strengthened as power relations and interests shift; by contrast, neoliberals see the institution itself playing a role in embedding norms and practices. These norms and practices, as they become constituted in particular institutions and in the institution of multilateralism itself, feed back into and shape the interests of states, thereby sustaining cooperation even when strategic relations, relative power, and the interests of states fluctuate or shift.³⁵

Ruggie’s focus on multilateralism in the 1990s was grounded in his earlier work on regimes. Where regime analysis centred on how laws, norms, ideas, power and perceived interests intersect under anarchic conditions in which sovereign states compete for power and influence, Ruggie viewed multilateralism as a “generic institutional form” that “coordinates behaviour among three or more states on the basis of generalised principles of conduct”.³⁶ He identified three basic institutional forms of interstate relations – international orders, international regimes, and international organisations – noting that “each type can be, but need not be, multilateral in form”.³⁷ Ruggie formulated three principles of multilateralism: diffuse reciprocity, indivisibility (which may be interpreted as shared responsibilities and benefits³⁸), and nondiscrimination.³⁹ The generalised principles specify conduct “without regard to the particularistic interests of the parties or the strategic exigencies that may exist in any specific occurrence”.⁴⁰ Reciprocity may be specific (tit-for-tat) or diffuse (in which benefits are not dependent on direct, equal or specific quid pro quo).⁴¹ Among the principles of state conduct, privilege is given “above all, [to] nondiscrimination”.⁴² Ruggie has carried the concepts of nondiscrimination and reciprocity from trade regime analysis into multilateral theory without sufficiently examining how applicable they are for other areas. Indeed, this CTBT study raises

serious doubts about the relevance of much of Ruggie's approach for security issues and arms control: only on the international monitoring system did the negotiations conform recognisably to Ruggie's principles. When he does consider multilateralism in security relations he rather diffidently notes that it pertains to some concept of "collective security or collective self-defence".⁴³ In this, he is reflecting the conventional-diplomatic perspective that multilateralism is not only about the number of states but also entails a qualitative dimension. In 2001, for example, UN Under-Secretary General for Disarmament Jayantha Dhanapala juxtaposed multilateralism with unilateralism as the "two leading approaches available to states in pursuit of their ideals and self interests".⁴⁴ His discussion made clear that however poorly worked out in practice, multilateralism is imagined to convey norms and ideals about greater international justice, legal equality (or at least nondiscrimination) and legitimacy.

Such hopes might be considered wishful thinking, but they form the basis for a third approach – of increasing importance in the diplomatic arena – that conceives of multilateralism as a tool and institution for promoting the normative goals of global governance and international law. Where rationalist regime theory derived from the realist and neoliberal schools of thought⁴⁵, the 'new multilateralism'⁴⁶ advanced by Cox and Schechter is associated with the reflectivist approach of the 'third paradigm' of late 20th century and early 21st century international relations theory, variously identified as structuralism, neomarxism and globalism.⁴⁷ Instead of managing cooperation problems in the state-centric anarchy *problematique*, new multilateralism was developed to address what its proponents regard as the more substantive *global problematique* of transboundary security challenges, such as poverty, pollution, climate change, terrorism, drugs, crime, and violence. Global governance theories are critical of state-centred politics, and emphasise the multiplicity of actors: not just governments and intergovernmental institutions, but transnational corporations, citizens' movements, and nongovernmental organisations.⁴⁸ Accordingly, new multilateralism encompasses nongovernmental, intergovernmental and transgovernmental relations, and is embedded with the normative "commitment to greater social equity, greater diffusion of power among countries and social groups, protection of the biosphere, moderation and nonviolence in dealing with conflict, and mutual recognition of the values of different civilisations."⁴⁹

To sum up the key differences: realists emphasise state power and view multilateralism as a mechanism for conflicting powers to coordinate in order to increase their relative power or mitigate security threats; neoliberals emphasise interstate cooperation for mutual benefits, and regard international regimes and institutions as being themselves instrumental in stabilising and sustaining cooperation; and new multilateralists emphasise participatory decision-making by states and civil society to promote the norms and objectives of collective security, global governance and international law. While regime theory *per se* has been influential for over two decades, multilateralism is still in the early stages of theoretical development. These three approaches have been briefly introduced here to give a conceptual context; though this thesis does not propose new theory, it aims to contribute to a deeper understanding of multilateralism in theory and practice.

In addition to the complex interaction of domestic, regional, intergovernmental and international interests noted above, the conduct of negotiations depends on the interplay of several related factors. These include the structure and procedures of the negotiating forum; the motivation, preferences, perceived interests and political will of the players, especially major players capable of impeding or facilitating progress; timing; commitment and stability of governments represented in the negotiations; personal and organisational leadership and alliances; degree of trust, tension, conflict and cooperation between some or all of the parties (which may also be influenced by geopolitical relations and objectives or problems in parallel negotiations in other fora, such as trade); bargaining strategies and tactics; the diplomatic climate; and relative levels of public awareness, engagement and pressure.

A single study, such as the CTBT, could yield interesting data on any of these variables or be relevant for developing several different theories, requiring a somewhat different focus or methodology for each. In focusing on the international negotiations, the questions I have chosen to prioritise are two-fold: those relating to the mechanisms and strategies by which states with significantly different expectations and interests converged to achieve the final treaty; and the roles and influence of civil society actors, whether individuals or nongovernmental organisations, in defining and influencing particular outcomes in the negotiations. By

focusing both on states and civil society, I aim to give a fuller picture of the strategies, factors and complexities in the construction of convergence in multilateral arms control than is usually provided in studies of this kind.

Methodology, Legitimacy and Limits

Two aspects of my methodology are discussed in the following section: the use of a single case study, and the empirical method of participant-observation.

The CTBT was chosen as the research subject because it has been an important objective related both to disarmament and nonproliferation for more than forty years. Though early efforts to achieve a comprehensive treaty have been well documented, much less is in the public domain about the negotiations from 1994-96.⁵⁰ The CTBT was the first multilateral nuclear arms treaty to be concluded since the 1968 Treaty on the Non-Proliferation of Nuclear Weapons (NPT). It followed closely on the heels of the Chemical Weapons Convention (CWC), a subject of desultory negotiations in the CD from 1984, which was suddenly concluded in 1992 following a spurt of post cold war enthusiasm, spurred by the Gulf War revelations of Saddam Hussein's clandestine nuclear, chemical and biological weapons programmes. Like the CWC, the CTBT had languished on the arms control agenda for decades, and was a beneficiary of the political changes that followed the fall of the Berlin Wall. By the mid-1990s, as noted above, a third arms control demand was catapulted onto the negotiating agenda by an innovative partnership between the political representatives of a group of middle power states and civil society groups involved more with humanitarian than traditional disarmament causes. They bypassed both the CD and the review and amendment process of the Convention on Certain Weapons (CCW⁵¹) to conclude the Mine Ban Treaty in 1997. Other agreements, such as a treaty banning the production of fissile materials for nuclear weapons purposes (fissban), were expected to follow; a negotiating mandate was adopted by the CD in 1995, but negotiations failed to get underway, amid frustration that the early post cold war invigoration of multilateral arms control has not been sustained.⁵²

In considering Hampson's question about multilateral negotiations, one approach might have been a comparative analysis of the negotiating processes for these three examples of post cold war multilateral arms control. However, though the Ottawa

Process and Mine Ban Treaty have been well documented, there is a paucity of published research and analysis on the CWC and CTBT negotiations, and what exists is much less detailed; so before a non-superficial comparative analysis can be made of these three negotiations, it is necessary to conduct more in-depth research into the CTBT and CWC.⁵³ As discussed below in relation to the methodology of participant-observation, I was well placed to conduct primary research on the CTBT, thereby filling part of this gap in international relations scholarship. Moreover, the CTBT conforms to a number of conditions for which single case studies are acknowledged to be a preferred strategy: notably, in depth investigation of 'how and why' questions; contemporary phenomena; and where there are inadequate or seriously asymmetric data-bases among potential targets for comparison.⁵⁴

Having decided to put a single treaty at the heart of this thesis, the processes of negotiations on the issues of scope, verification and entry into force are treated separately. Certain variables, such as the negotiating forum, structure, rules and participants, were essentially fixed across the CTB negotiations, but the three issues presented very different challenges and, as the study discusses, convergence was achieved rather differently in each case. Though care must be taken not to infer inappropriately from the particular to the general, the characteristics of the CTBT case allow for some interesting comparisons to be made of the different negotiating dynamics and outcomes across these three issue areas in the one set of treaty negotiations.⁵⁵

The second methodological decision was to base the thesis on my own empirical research obtained through participant-observation. The formal negotiations took place at the *Palais des Nations*, Geneva, under the auspices of the CD, and structured through an Ad Hoc Nuclear Test Ban Committee and two working groups, on verification and legal and institutional issues. By the rules of the CD, the committee and working group meetings were closed to nongovernmental observers. During that period, governments made on-the-record public statements at CD plenaries or through national debates or press conferences.⁵⁶ In April-May 1995, the NPT Review and Extension Conference in New York provided an intense and dramatic negotiating medium, at which linkages between the CTBT negotiations and the NPT

commitments were an important subtext in many interactions and in the final outcome.⁵⁷

I was in a position to conduct first-hand, original research, since I attended the CD with the aim of pushing for a strong, comprehensive test ban and preventing another limited treaty being passed off as a CTBT.⁵⁸ Once in Geneva, I decided to explore the issue more deeply in order to learn more about the possibilities and limitations of multilateral arms control. My role as a participant-observer is consistent with Robert Cox's argument that "all theories have a perspective"⁵⁹ but also raises ethical, methodological and political challenges, explored as part of the development of post-positivist theory in the social sciences, most notably in feminist research. When the researcher is at the same time a participant in the events being researched, it is particularly important to acknowledge and question the relationship and interaction between observation, participation and research.⁶⁰ Feminist and reflectivist theories have specifically challenged traditional assumptions about research objectivity and the researcher/researched relationship. Indeed, they go further, arguing that research reports that include no statement about the researcher's own experience and perspective should be distrusted, along with traditional notions of objectivity, represented as a rationalist construct that serves to underpin the assumptions of the dominant paradigm and exclude or marginalise alternative realities experienced by actors consigned by the dominant paradigm to the periphery.⁶¹

In reporting on the CTB negotiations, I was neither a direct insider to the negotiations, nor 'just' an observer.⁶² In general, I sought to have impact on the negotiations, either by directly persuading diplomats and officials to take up my ideas or those of other NGOs or states, or through work with NGOs in the most relevant countries. I also assisted some diplomats with formulating ideas, or occasionally in writing a statement or working paper. The basic act of observing and reporting, fed back into the negotiations through emails and publications, may also have affected the positions of states and therefore the conduct of the negotiations in ways I did not intend or of which I was not aware.⁶³ Research based on observer-participation also has implications when providing notes and references. The researcher may herself be the source of primary references, for her own study and for those of others (where it

is important to be aware of the dangers of creating a self-referential or feedback loop).⁶⁴

I kept detailed notes of meetings with all the major negotiators during the CTBT negotiations from January 1994 to August 1996, many of which I emailed to nongovernmental organisations and other interested individuals. In order to check information and flesh out my weekly email reports on the CTBT negotiations to other NGOs, my research involved a number of different strategies, from one-to-one meetings with diplomats to close scrutiny of working papers, statements, and other relevant documents.⁶⁵ I deliberately chose to discuss the negotiations with diplomats and scientists from all groupings and political positions, but that did not completely avoid mistakes or bias. I was conscious of an informal process of natural selection, since some interlocutors were not very forthcoming, either from caution or because they knew less about the negotiations than I did.⁶⁶ Some diplomats regarded meetings with me as opportunities to test their assessment of negotiations against my perceptions. Some, with greater or lesser subtlety, tried to pump me for information about other participants or groups. This was especially noticeable when meeting with the NWS, India, Israel and Pakistan, whose concerns about their interests and rivals was higher than that of the middle powers or nonaligned.⁶⁷ Evaluating the information from my meetings with diplomats and officials necessitated the development of 'researcher's intuition', to identify whether negative or equivocal replies indicated that the information was false, unknown, or sensitive, and to gauge the nuances behind some affirmatives. As I became more knowledgeable and more diplomats came to trust me with insider information, vigilance against inadvertently breaching confidentiality was especially important.⁶⁸ Where possible, external references have been used to corroborate information and observations, but in the case of direct observation or where conversations with negotiators were off the record, as most were, the observer-participants' own experience, recorded as truthfully as possible, may be taken as a reliable reference.

The working papers, of which there were more than 340, comprised ideas, arguments, data and proposals put forward by delegations or officials, as well as draft language on articles and the early draft texts. They were not only invaluable as a record of a particular government's position, but also provided fascinating insights into perceived

national interests and the relative levels of engagement by different governments. Although it would have been difficult to document and analyse the development of conflicts and convergence solely on the basis of the working papers and formal statements, they provided detail and evidence with which to understand and evaluate the anecdotal and oral information provided in my meetings with the delegates. During the intense final months of negotiations from May 1996, many diplomats would make a point of ensuring that I was immediately informed of developments, while at the same time checking whether my intelligence corresponded with their own. I would make myself easily accessible by waiting long hours outside working group or committee meetings for delegates to emerge for a break or refreshments.⁶⁹

My informal emails and weekly reports have provided one kind of record of the negotiations and their political context – in effect, a diary as events unfolded. These emails were intended to provide as accurate information as possible, but were also sent to test ban advocates with suggestions for how to influence their governments to ensure that the negotiations proceeded towards our preferred outcome of a genuinely comprehensive ban on nuclear testing, without thresholds or conditions. From the middle of the first year, partly in response to requests from diplomats and government officials, I began to publish more formal reports.⁷⁰

While the CTBT was being negotiated, I focused primarily on observing and reporting on developments and working with diplomats, officials and other NGOs. Once the treaty was concluded I began to formulate some hypotheses and research other arms control and multilateral negotiations, by way of comparison. Partly through necessity (full time job) and partly from choice I did not write the thesis immediately after the CTBT was adopted by the United Nations in 1996. In view of the politically charged and conflictual endgame, I considered it important to allow time to see how the finished treaty would ‘weather’, although I have kept the South Asian tests and ratification difficulties *per se* outside the purview of this thesis. In any empirical study of this kind, it is important to acknowledge and, if possible, compensate for the fact that information is mediated through the perspectives and interests of the players, who may at the same time be seeking to manipulate outcomes by means of selective transmission of certain kinds of information, especially to a participant-observer providing real time reporting that may influence other states’

perceptions. As time elapses, the sensitivity of some issues is reduced. Interviews conducted after the conclusion of negotiations were used both to check the accuracy of information gained contemporaneously and elicit reminiscences and retrospective analysis from major players in order to shed light on hidden parts of the negotiations. Anecdotal information and recollections may nevertheless be incomplete or contain inaccurate information, and as such carry a methodological note of caution.⁷¹ Finally, I sought to test and substantiate the analysis through interviews conducted between 1999 and 2002 with some of the most important ambassadors.⁷²

Thesis Outline

This thesis on the dynamics of multilateral arms control negotiations is organised in nine chapters. Chapter 1 has introduced the issues and questions that will be addressed, outlined three approaches to multilateralism, and discussed the research methodology.

Chapter 2 opens with a brief discussion of the concepts of distributive and integrative convergence, and then considers the principal actors in the negotiations, state and nonstate. Post cold war developments in theories of civil society are considered, including the relevance of epistemic communities and norm entrepreneurs in diffusing knowledge and norms and shaping expectations. To facilitate understanding of the role of power, interests and expectations in this study of nuclear arms control, the states participating in the CD are demarcated in terms of nuclear capabilities and aspirations. This section goes beyond the classic nonproliferation distinction made between the NWS and NNWS, and considers states with de facto nuclear weapons or programmes, as well as 'non nuclear weapon' parties to the NPT with nuclear weapons ambitions or sufficient technological capabilities to constitute an insurance programme, or who may host on their territory nuclear weapons as part of an alliance arrangement, as in the case of NATO members. The chapter considers the negotiating forum, the Conference on Disarmament, and its structure and rules, and ends with discussion of multilateral negotiations as a process for regime formation, the relevance of power in negotiations, and a range of negotiating strategies and tactics used by participants to obstruct or facilitate convergence.

To place the case study in its wider political context, Chapter 3 offers a synopsis of nuclear arms control from the mid-1950s to 1989, with particular emphasis on the earlier, thwarted attempts to achieve a total and comprehensive nuclear test ban, and the political impact of civil society's interactive role in informing and amplifying fluctuations in public concern about nuclear weapons and testing.

Chapter 4 looks at the 'prenegotiation' phase from 1990 until the commencement of the CTBT negotiations in January 1994, with particular emphasis on the role of transnational civil society in bringing the NWS to the negotiating table, using a toolbox of public, legislative and diplomatic strategies to foster a sense of urgency and exert leverage for a CTBT, as the 1995 date for deciding on the fate of the NPT drew near. The chapter explores the different pressures that led three of the NWS to enact testing moratoria, which acted as a transitional confidence-building bridge to facilitate the opening of test ban negotiations.

Chapter 5 gives a chronologically based narrative of the CD negotiations on the CTBT from 1994-1996, highlighting the major issues and events and giving context to the next three chapters, which provide detailed analysis of the politics, negotiating dynamics and actions that contributed to the outcomes on scope, verification and entry into force.

Chapter 6 examines the process by which the scope article was shaped, given meaning and adopted, showing that convergence was determined neither through multilateral interstate negotiations in Geneva, nor in P-5 minilateral negotiations, as had been expected. It explores how the decision was shaped by civil society strategies, in which two factors predominated: the political effect on French and US decision-making of the swift and hostile public reaction to the resumption of French testing; and the role of epistemic actors and norm entrepreneurs in providing technically relevant solution-oriented information to the White House and key CD delegations, which undermined the case for a low yield threshold and overturned China's strategy to obtain a provision for so-called peaceful nuclear explosions.

Chapter 7 illustrates the differences between the negotiations on an international monitoring system (IMS) and on-site inspections (OSI) and national technical means

(NTM). While government scientists took on epistemic roles of knowledge-diffusing and norm-building, civil society had little or no involvement in the verification negotiations. Unlike the rest of the CTBT, only the IMS negotiations bore any resemblance to Ruggie's principles for multilateralism, with reciprocity, shared responsibilities and benefits, and nondiscrimination. The negotiations on inspections and NTM pitted politically sensitive national concerns about sovereignty (and the concomitant risk of cheating) against intrusion (and the facilitation of spying), but the chapter shows how problems and concerns were mitigated in the negotiations by more conciliatory political relations, mutual trade-offs, and the interplay of more states in the multilateral environment.

Chapter 8 provides insight into the conflicting intentions and intransigence that characterised negotiations on entry into force, now widely viewed as the treaty's Achilles' heel. Anecdotal evidence supplements the analysis of how the competing expectations of some major players with regard to the role, function and benefits of multilateral arms control and the CTBT interacted to undermine the security objectives of the majority.

Chapter 9 concludes the thesis by drawing out the major findings, first considering how a state's interests in nuclear weapons influenced its expectations and negotiating posture, then summarising the processes and factors most relevant for explaining how they were brought to convergence, with assessment of the regime quality of the agreements reached. The separate consideration of the negotiations on scope, verification and entry into force enabled the complex interaction of factors that have been underrepresented in other studies to be analysed more fully. The chapter discusses how different kinds of convergence were achieved through the interplay not only of power and interests, but factors such as norms and regime values, knowledge and ideas, civil society engagement, issue-based alliances, and the level of domestic and international political attention and support. The thesis concludes that realist and neorealist approaches are limited by their failure to distinguish between distributive and integrative convergence, while new multilateralism fails to address why states persistently engage in distributive bargaining when integrative convergence would provide greater mutual benefits.

Notes

¹ Paragraph 28, *Final Document, Special Session of the General Assembly on Disarmament*, July 1, 1978 (New York NY: United Nations, May 1988 Reprint) p13.

² This is intended as a caricature of the dominant states' assumptions about nonproliferation, and does not exclude more nuanced understandings, including the widely-held view that the 1968 Treaty on the Non-Proliferation of Nuclear Weapons (NPT) enshrines a commitment to disarmament and only differentiated the nuclear haves in order to confer a different set of obligations, not to legitimise their nuclear status. Different understandings of disarmament and nonproliferation are central to this thesis and will be discussed further. The term nuclear weapon states, abbreviated to NWS, is used to denote only the People's Republic of China, France, the Russian Federation (formerly the Soviet Union), the United Kingdom, and the United States, as defined in Article IX.3 of the NPT, which stated that "a nuclear weapon state is one which has manufactured and exploded a nuclear weapon or other nuclear explosive device prior to 1 January, 1967". The abbreviation P-5, common in diplomatic parlance, denotes that all five are permanent members of the UN Security Council. Chapter 2 discusses the implications of different classifications of states in terms of their placement on a nuclear spectrum. For more on the NPT, see Chapter 3.

³ Fen Osler Hampson with Michael Hart, *Multilateral Negotiations: Lessons from Arms Control, Trade and the Environment* (Baltimore and London: The Johns Hopkins University Press, 1995) p 352. For elaboration of the argument that the larger the group, the less likely the achievement and distribution of a collective good, see Mancur Olson, *The Logic of Collective Action*, (New York: Schocken, 1968).

⁴ See, for example, Joseph Cirincione, "Historical Overview and Introduction" in Joseph Cirincione (ed.), *Repairing the Regime*, (New York NY: Routledge, 2000) p 3. The theoreticians' concept of regimes is more complex and nuanced. See also Robert O. Keohane, *After Hegemony: Cooperation and Discord in the World Political Economy*, (Princeton NJ: Princeton University Press, 1984); Oran R. Young, *International Cooperation: Building Regimes for Natural Resources and the Environment*, (Ithaca NY and London: Cornell University Press, 1989); and Volker Rittberger (ed.), *Regime Theory and International Relations*, (Oxford: Clarendon Press, 1993).

⁵ This definition was developed through discussions among a cross-section of neorealist and neoliberal theorists, and contained in Stephen D. Krasner (ed) *International Regimes*, (Ithaca NY and London: Cornell University Press, 1983). Krasner defined his terms thus: "Norms are standards of behaviour defined in terms of rights and obligations. Rules are specific prescriptions or proscriptions for action. Decision-making procedures are prevailing practices for making and implementing collective choice." See "Structural causes and regime consequences: regimes as intervening variables", in Krasner, 1983, p. 2.

⁶ Ibid. This does not imply that all regimes are multilateral.

⁷ Nuclear explosions are measured in terms of their TNT equivalent yield, given in kilogrammes (kg), tonnes or tons (t) and kilotonnes (kt). (US and European measurements and nomenclature differ, accounting for the occasional use of tons and kilotons in the text, as well as tonnes and kilotonnes.) A zero yield means that no nuclear test or explosion can be carried out that would produce a fission or fusion yield of radiation energy or radioactive products. Though there is still some controversy over certain kinds of laboratory testing in which minute amounts of nuclear products may be released, the CTBT negotiators assumed at the time that the term zero yield ruled out the products of a nuclear chain reaction.

⁸ Stephen D. Krasner, "Global Communications and National Power: Life on the Pareto Frontier", *World Politics* 43 (April 1991) pp 336-366.

⁹ The precise nature of this activity was never defined in the CTBT. For readability, I have employed the vernacular term 'nuclear testing' to refer to what should, strictly speaking, be 'nuclear explosive testing', by which is meant the testing of a nuclear warhead or device, involving an explosion and release of nuclear energy caused by the critical assembly or compression of fissile or fusion material. Though it would be pedantic to use the more exact term throughout, it should be noted that the distinction between nuclear testing and nuclear explosive testing became an important issue for some of the nonaligned states who wanted the treaty to cover laboratory testing as well as explosions, as is discussed in Chapter 6.

¹⁰ Ragnhild Ferm, *Nuclear Explosions 1945-96*, SIPRI Yearbook 1997 (Oxford: Oxford University Press and Stockholm International Peace Research Institute, 1997), pp 434-435. Calculations of numbers of tests may vary, depending on the quality of information available and factors such as whether ripple tests (multiple simultaneous firings) are measured as one or several.

¹¹ While many analysts have studied the ways in which decision-makers are influenced by both domestic and international pressures, Robert Putnam's early theorising about the domestic/international dynamic, which he characterised as a two-level game, was particularly influential. Robert D. Putnam, "Diplomacy and domestic politics: the logic of two-level games", *International Organization* 42:3 (1988) pp 427-460. For the relationship between domestic sources of foreign policy, see also the essays in Peter B. Evans, Harold K. Jacobson, and Robert D. Putnam, *Double Edged Diplomacy: International Bargaining and Domestic Politics* (Berkeley CA: University of California Press, 1993). Also the essays in B. Hocking (ed.), *Foreign Ministries: Change and Adaptation* (Basingstoke: Macmillan, 1999); and James N. Rosenau (ed.), *Domestic Sources of Foreign Policy* (London: Collier-Macmillan Ltd, 1967). See also Graham T. Allison, *Essence of Decision: Explaining the Cuban Missile Crisis*, (Boston MA: Little, Brown & Co. 1971); Robert Jervis, *Perception and Misperception in International Politics* (Princeton NJ: Princeton University Press, 1976); Charles W. Kegley, Jr. and Eugene R. Wittkopf, *American Foreign Policy: Pattern and Process*, Fourth edition, (New York NY: St. Martin's Press, 1991); Morton H. Halperin, *Bureaucratic Politics and Foreign Policy* (Washington DC: Brookings Institution, 1974); Fred C. Iklé, *How Nations Negotiate* (New York: Harper & Row, 1964); and Glen H. Fisher, *Public Diplomacy and the Behavioral Sciences*, (Bloomington IA: Indiana University Press, 1972).

¹² Of Ruggie's 12 chapters, eight use case studies: two focus on regional security (NATO and Europe), but none deals with arms control. John Gerard Ruggie, "Multilateralism: the Anatomy of an Institution" in Ruggie (ed.), *Multilateralism Matters*, (New York: Columbia University Press, 1993). Similarly, neither of the two chapters on security issues addresses arms control in Michael G. Schechter (ed.), *Future Multilateralism: The Political and Social Framework*, (New York NY: United Nations University Press, 1999). The essays in Michael Brenner's collection address security, but consider multilateralism from a pre-eminently NATO and European perspective. Michael J. Brenner (ed.), *Multilateralism and Western Strategy* (New York NY: St. Martin's Press, 1995). Fen Hampson included three arms control case studies, covering the Partial Test Ban Treaty, the Stockholm Conference on Confidence- and Security-Building Measures and Disarmament in Europe, and the negotiations on the Conventional Forces in Europe (CFE). All three were situated within cold war geostrategic relations and Hampson's use of the PTBT as a case study of multilateral negotiations stretches the definition, since only three states actually negotiated. In fact, this analysis focuses not on multilateral dynamics but on the role of technical information and domestic pressure groups on US policy and the importance of leadership in the trilateral relationship. Hampson, 1995.

¹³ Since my purpose is to examine the conduct and shaping of multilateral arms control in the international arena, I focus on the demonstrated political and ideological attributes of a state's negotiating posture rather than the domestic processes of foreign policy formation, cognitive psychology or players' personalities. Where relevant, I have incorporated some discussion of domestic processes, particularly for important states at key turning points, and through research interviews with senior diplomats or officials, but it is not possible or necessary for this thesis to attempt to give balanced and in depth attention to all the significant governmental debates.

¹⁴ As will be discussed in greater detail in chapters 2 and 4, these debates rather than the historical usage provide the context for exploring the role of civil society in achieving particular CTB outcomes. For a very useful analysis and essays covering six different fields of civil society engagement, see Ann M. Florini (ed.), *The Third Force: The Rise of Transnational Civil Society*, (Tokyo: Japan Center for International Exchange and Washington D.C.: Carnegie Endowment for International Peace, 2000).

¹⁵ For a discussion of the specific Marxist meaning and early critique of its changing use, see Ellen Meiksins Wood, "The Uses and Abuses of 'Civil Society'", in Ralph Miliband, L. Panitch, and John Savile (eds.), *The Socialist Register 1990* (London: Merlin Press, 1990). See also Krishnan Kumar, "Civil Society: an inquiry into the usefulness of an historical term", *The British Journal of Sociology*, 44:3 (September 1993); and Mustapha Kamal Pasha and David L. Blaney, "Elusive Paradise: The Promise and Peril of Global Civil Society" *Alternatives*, 23 (1998) pp 417-450. In addition to Florini, one of the most influential analyses of modern usage of the concept is Helmut Anheier, Marlies Glasius and Mary Kaldor (eds.), *Global Civil Society 2001* (Oxford: Oxford University Press, 2001).

¹⁶ In the past, NGOs, as traditionally institutionalised in the UN system, were regarded as encompassing advocacy organisations, nonprofit organisations, private businesses and industry associations. Maureen R. Berman and Joseph E. Johnson (eds.), *Unofficial Diplomats*. (New York:

Columbia University Press, 1977), especially pp 1-34. For a description of the “long, laborious, highly political and bureaucratic process” and rigid criteria for NGO accreditation to the United Nations through either the Economic and Social Council (ECOSOC) or the Department of Public Information (DPI), see Merav Datan, “The United Nations and civil society”, *Disarmament Forum* 4 (Geneva: United Nations Institute for Disarmament Research, 1999), p 43.

¹⁷ Richard Price, “Reversing the Gun Sights: Transnational Civil Society Targets Landmines”, *International Organization* 53:3 (1998) pp 613-644, quote from p 613.

¹⁸ “Secretary-General Declares Comprehensive Test Ban Treaty Open for Signature”, *United Nations Press Release*, September 24, 1996, SG/SM/6062.

¹⁹ See Ethan A Nadelmann, “Global prohibition regimes: the evolution of norms in international society”, *International Organization* 44:4 (Autumn 1990), pp 479-526; and Emanuel Adler, “The emergence of cooperation: national epistemic communities and the international evolution of the idea of nuclear arms control”, in Peter M. Haas, *Knowledge, Power, and International Policy Coordination*, (Columbia SC: University of South Carolina Press, 1992).

²⁰ The 1997 Mine Ban Treaty enshrined a multilateral but not universal ban on anti-personnel landmines. Taking place in parallel with the CTBT, the “Ottawa Process” that led to the treaty was celebrated for its ground-breaking “partnership” between civil society and governmental actors, a fact acknowledged when the Nobel Prize was awarded to Jody Williams and the International Campaign to Ban Landmines (ICBL) in 1997. See Maxwell A. Cameron, Robert J. Lawson and Brian W. Tomlin, (eds.) *To Walk Without Fear: The Global Movement to Ban Landmines*, (Toronto: Oxford University Press, 1998); Kenneth Anderson, “The Ottawa Convention Banning Landmines, the Role of International Non-Governmental Organizations and the Idea of International Civil Society.” *European Journal of International Affairs*. Vol. II, No. 1, 2000.

²¹ A note on nomenclature and classification is necessary here, as international relations theorists seek to distinguish new (and sometimes not so new) developments on traditional themes, and scholars on different sides of the Atlantic (with different analytical traditions) sometimes give similar names to different approaches or different names to similar approaches. What Krasner terms ‘Grotian’ is more commonly associated with neoliberal institutionalism, usually contracted to neoliberalism, which emerged from a largely US-driven 1980s’ development of pluralism, which was itself perceived as developing out of 1940s’ liberal institutionalist challenge to classical realist theory. For the purposes of this thesis, the theoretical distinctions between traditional realism, neorealism and the form of synthesised ‘structural realism’ put forward by Buzan, Jones and Little, though important in other contexts, are not as relevant as realism’s shared assumptions and commonalities. Following Krasner’s usage, I shall refer to realism, signifying its broadest sense. On the distinctions between these different schools of thought, see Chris Brown, *Understanding International Relations*, (Basingstoke: Macmillan Press, 1997) pp 49-54; and John Baylis and Steve Smith (eds.), *The Globalization of World Politics*, second ed. (Oxford: Oxford University Press, 2001), pp 141-171; and Barry Buzan, Charles Jones and Richard Little, *The Logic of Anarchy: Neorealism to Structural Realism* (New York: Columbia University Press, 1993). For a useful critique of the “inter-paradigm debate” and the various classifications used by different theorists, see Ole Waever, “The rise and fall of the inter-paradigm debate” in Steve Smith, Ken Booth & Marysia Zalewski (eds.) *International theory: positivism and beyond* (Cambridge: Cambridge University Press, 1996), pp 149-185. See also Mark Neufeld, *The restructuring of International Relations theory* (Cambridge, Cambridge University Press, 1995) p 47; Michael Banks, “The Inter-Paradigm Debate” in Margot Light and A.J.R. Groom, *International Relations: A Handbook of Current Theory*, (London: Frances Pinter, 1985), pp 7-26; Barry Buzan, “From International System to International Society: Structural Realism and Regime Theory meet the English School”, *International Organisation* 47:3 (1993) pp 327-352; Andrew Hurrell, “International Society and the Study of Regimes: a Reflective Approach” in Rittberger, 1993, pp 49-72; and Kal J. Holsti, “International Relations at the end of the Millennium”, *Review of International Studies* 19:4 (1993), pp 401-8.

²² Carr provided a nuanced analysis of the principles and policy implications of realism in international struggles for survival (and power) under conditions of scarcity and conflict, in E. H. Carr, *The Twenty Years’ Crisis, 1919-1939* (London: Papermac, 1995). Morgenthau’s influential postwar theory of realism rested on the notion that states struggled for power because aggression was the “natural” human behaviour under conditions lacking a superordinate authority. Hans J. Morgenthau, *Politics Among Nations: The Struggle for Power and Peace*, revised by Kenneth W. Thompson, brief ed., (New York: McGraw-Hill Inc, 1993, first published in 1948).

²³ Kenneth N. Waltz, *Theory of International Politics*, (New York: McGraw-Hill, 1979), especially pp 90-93 and 102-128.

²⁴ How this notion of the unified state relates to government authority is a problem for realists, and positing a disconnection between state interests and a state's government poses difficulties for realist policy approaches in multilateralism. In practice, as illustrated in the case of the CTBT and discussed in Chapter 2, a state's negotiating position may significantly shift with a change in government. Chris Brown makes the point that realists do not perceive states' interests as merely equating with the interests of whatever group controls the government, as illustrated by Morgenthau's protests against the Viet Nam war on grounds that it was contrary to American national interests. See Chris Brown, *Understanding International Relations*, (Basingstoke: Macmillan Press, 1997), pp 33-35. Morgenthau's distinction follows Rousseau, who distinguished between the "General Will", concerned with common preservation and well being, and the "institution of government", created by political acts rather than the foundational social contract. Jean-Jacques Rousseau "The Social Contract" in Ernest Barker (introduction), *Social Contract: Essays by Locke, Hume and Rousseau* (London: Oxford University Press, 1971) pp 169-307.

²⁵ Arthur Stein, "Coordination and collaboration: regimes in an anarchic world", in Krasner, 1983, p 132.

²⁶ Ibid., pp 115-140.

²⁷ Adapted from Stein, 1983, p 135.

²⁸ In formulating his parsimonious theory of international relations, Waltz dismissed many of the influences on state policy and international decision-making as extraneous interferences. Waltz, 1979, p 91. For an interesting critique of Waltz's neorealism, balance of power theories and structural realism, see Tanya Ogilvie-White, *Theorising Nuclear Weapons Proliferation: Understanding the Nuclear Policies of India, South Africa, North Korea, and Ukraine*, PhD thesis, University of Southampton, 1998.

²⁹ This is assumed particularly in the 'high politics' of security, war and peace. Hegemonic stability theory, developed around Western objectives of a liberal, free trade economic order under US leadership, held that international order depends on a dominant state prepared, in effect, to shoulder the burden of responsibility. The classical statements of hegemonic stability theory are found in the writings of Robert Gilpin and Charles Kindleberger. See, for example, Robert Gilpin, *US Power and the Multinational Corporation: The Political Economy of Foreign Direct Investment* (New York: Basic Books, 1975); Robert Gilpin, *War and Change in World Politics* (Cambridge: Cambridge University Press, 1981); Charles P. Kindleberger, *The World in Depression, 1929-1939* (Berkeley CA: University of California Press, 1973); Charles P. Kindleberger, "Dominance and Leadership in the International Economy: Exploitation, Public Goods and Free Rides", *International Studies Quarterly* 25 (1981) pp 242-5. See also A.F.K. Organski, *World Politics*, second edition (New York: Knopf, 1968), especially pp 338-376. During the 1970s, perceptions that the United States was declining in its role as hegemon was partly what prompted some theorists to look at regime formation and maintenance. See Robert O. Keohane, *After Hegemony: Cooperation and Discord in the World Political Economy*, (Princeton NJ: Princeton University Press, 1984).

³⁰ There is no index reference to 'nongovernmental organisations' or 'civil society' in Waltz, for example. See Kenneth N. Waltz, *Theory of International Politics*, (New York: McGraw-Hill, 1979).

³¹ Liberal realists, also known as the "English School" although its theorists are not exclusively British, are epitomised by Martin Wight, *Power Politics*, second edition, (Leicester: Leicester University Press, 1946/1978); and Hedley Bull, *The Anarchical Society: A Study of Order in World Politics*, (London: Macmillan, 1977). Some writers dispute the liberal realism label applied by others to Bull and Wight. The demarcation between their ideas on international society and American-inspired neoliberalism are not always clear, although the roots of the two theoretical approaches are regarded as different.

³² Confusingly, because they share a positivist epistemology and many assumptions, certain theorists regarded as neoliberals, notably Keohane and Nye, are simultaneously classified by some as neorealists. See, for example, Richard K. Ashley, "The Poverty of Neorealism", *International Organisation* 38:2 (1984), pp 225-286. Waever and others also noted that as realism morphed into neorealism, and liberalism became neoliberalism, both "underwent a self-limiting redefinition towards an anti-metaphysical, theoretical minimalism", becoming increasingly compatible with each other. See Ole Waever, "The rise and fall of the inter-paradigm debate" in Steve Smith, Ken Booth & Marysia Zalewski (eds.) *International theory: positivism and beyond* (Cambridge: Cambridge University Press, 1996), pp 149-185. From within, there were also attempts to synthesise the paradigms. See John Gerard Ruggie, "Continuity and Transformation in the World Polity: Towards a Neo-Realist Synthesis", *World Politics* 36:2 (1983), pp 261-285; and Barry Buzan, "From International System to International Society: Structural Realism and Regime Theory meet the English School", *International Organisation* 47:3 (1993) pp 327-352.

³³ Robert O. Keohane and Joseph S. Nye (eds.) *Transnational Relations and World Politics* (Cambridge MA: Harvard University Press, 1972). Robert O. Keohane and Joseph S. Nye, *Power and Interdependence*, Third edition, (New York, NY: Longman 2001/first published 1977).

³⁴ Joseph M. Grieco, "Anarchy and the Limits of Cooperation", *International Organization* 42 (Summer 1988), p 486.

³⁵ Robert O. Keohane, *After Hegemony: Cooperation and Discord in the World Political Economy*, (Princeton NJ: Princeton University Press, 1984), especially chapters 5 and 6.

³⁶ Keohane provided a minimalist academic definition of multilateralism as "the practice of coordinating national policies in groups of three or more states" which was inadequate even as a starting point. Robert O. Keohane, "Multilateralism: An Agenda for Research", *International Journal* 45:4 (1990), p 731. Although Ruggie takes the concept much further than Keohane, he also adopts the number three in his basic formulation. John Gerard Ruggie, "Multilateralism: the Anatomy of an Institution" in Ruggie (ed.), *Multilateralism Matters*, (New York: Columbia University Press, 1993), p 8. This is misleading: for practitioners, definitions of unilateral, bilateral, trilateral, plurilateral and multilateral are not just about the number of parties ($n=1$, $n=2$, $n=3$, or $n>3$). Nor does normal diplomatic practice regard multilateralism as starting at three. The trilateral test ban talks among Britain, the United States and the Soviet Union in 1958-63 and again in 1977-80 are not normally understood to be examples of multilateralism, although there was some wider engagement of the multilateral community (in the latter case only through reporting to the Geneva Disarmament Conference).

³⁷ John Gerard Ruggie, "Multilateralism: the Anatomy of an Institution" in Ruggie (ed.), *Multilateralism Matters*, (New York: Columbia University Press, 1993), pp 7-12.

³⁸ What Ruggie meant by indivisibility was not very clear, but James Caporaso attempts to define it as "the scope (both geographic and functional) over which costs and benefits are spread, given an action in or among component units". See Caporaso, 1993, p 53.

³⁹ Ruggie, 1993, pp 7-12.

⁴⁰ Ibid.

⁴¹ See, for example, Jock A. Finlayson and Mark W. Zacher, "The GATT and the regulation of trade barriers: regime dynamics and functions", in Krasner, 1983, pp 273-314; and Robert O. Keohane, "The Analysis of International Regimes: Towards a European – American Research Programme" in Rittberger, 1993, pp 23-45. Jervis has a brief discussion of reciprocity in the Concert of Europe, which acted as an enabler of state cooperation in circumstances in which they would not otherwise have been able to do. Robert Jervis, "Security Regimes" in Krasner, 1983, pp 173-194.

⁴² Ruggie, 1993, p 7. See also Lisa Martin, "The Rational State Choice of Multilateralism", in Ruggie, 1993, p 91.

⁴³ Ruggie, 1993, p 7.

⁴⁴ Jayantha Dhanapala, "Multilateralism and the Future of the Global Nuclear Nonproliferation Regime", *The Nonproliferation Review* 8:3 (Fall/Winter 2001) p 99-100.

⁴⁵ For an early critique of regime theory, which argues that it is state-centric, imprecise, value based, overemphasises the static and underemphasises the dynamic aspects of change, see Susan Strange, "Cave! Hic dragones: a critique of regime analysis" in Krasner, 1983, pp 337-354.

⁴⁶ The term 'new multilateralism' is reputed to have been coined during discussions in the "Multilateralism and the United Nations System (MUNS)" programme under the auspices of Cox during the late 1990s.

⁴⁷ These concepts are contested. See Mark Neufeld, *The restructuring of International Relations theory* (Cambridge, Cambridge University Press, 1995) p 47; Paul R. Viotti and Mark V. Kauppi, *International Relations Theory: Realism, Pluralism, Globalism and Beyond*, third edition, (Boston MA: Allyn and Bacon, 1999); Steve Smith, Ken Booth & Marysia Zalewski (eds.) *International theory: positivism and beyond* (Cambridge: Cambridge University Press, 1996).

⁴⁸ The concept of governance, as developed in relation to urban policy during the 1980s, was distinguished from government in an early definition by James Rosenau, who noted that both "refer to purposive behaviour, to goal-oriented activities, to systems of rule; but government suggests activities that are backed by formal authority, by police powers to insure the implementation of duly constituted policies, whereas governance refers to activities backed by shared goals that may or may not derive from legal and formally prescribed responsibilities and that do not necessarily rely on police powers to overcome defiance and attain compliance." from James N. Rosenau, "Governance, Order, and Change in World Politics" in James N. Rosenau and Ernst-Otto Czempiel (eds.), *Governance without Government: Order than Change in World Politics* (Cambridge: Cambridge University Press, 1992) p 4. For a useful discussion of multilateralism and global governance, see Marie-Claude Smouts,

"Multilateralism from Below: a Prerequisite for Global Governance", in Michael G. Schechter (ed.), *Future Multilateralism: The Political and Social Framework*, (Basingstoke: Macmillan/United Nations University Press, 1999), pp 292-311. See also Tadashi Yamamoto and Kim Gould Ashizawa, *Governance and Civil Society in a Global Age* (Tokyo: Japan Center for International Exchange, 2001).

⁴⁹ The quotation, attributed to a paper given by Robert Cox to the United Nations University, August 17, 1993, is from Preface, Michael G. Schechter (ed.), *Innovation in Multilateralism* (Basingstoke: Macmillan/United Nations University Press, 1999), p ix; it also appears in Jonas Zoninsein, "Global Civil Society and Theories of International Political Economy" in Michael G. Schechter (ed.), *The Revival of Civil Society: Global and Comparative Perspectives* (Basingstoke: Macmillan Press, 1999), p 50.

⁵⁰ In fact, the original, authoritative analyses on the 1994-96 CTBT negotiations, on which many other studies have relied, were written and published by the author during the period of research for this thesis.

⁵¹ The full title of the CCW is the Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May be Deemed to be Excessively Injurious or to Have Indiscriminate Effects.

⁵² Whilst consideration of the reasons for this cannot now be included in this thesis, this study makes a valuable contribution to a policy-relevant evaluation of the conditions for the success or failure of multilateral arms control.

⁵³ As John Ruggie succinctly noted: "we cannot explain what we have not first described". Ruggie, 1993, p 36.

⁵⁴ See Dawn Burton, "The Use of Case Studies in Social Science Research", in Dawn Burton, ed. *Research Training for Social Scientists* (London: Sage Publications, 19) pp 215-225.

⁵⁵ Alexander L. George, "Case Studies and Theory Development: The Method of Structure, Focused Comparison", in Paul Gordon Lauren (ed.), *Diplomacy: New Approaches in History, Theory and Policy* (London: Collier Macmillan Publishers, 1979) pp 43-67.

⁵⁶ CD plenaries took place normally once a week (sometimes more often) during three sessions from January to September each year, with a break of around four weeks between sessions.

⁵⁷ Although I was often the only NGO representative covering the day-to-day CTBT negotiations, I was linked in with a much larger network of NGOs, disarmament activists and test ban advocates, utilising the technologies of the internet to supplement phone, fax and infrequent meetings. Many NGOs from a broad political spectrum participated in the NPT Preparatory Committee (PrepCom) meetings and Review and Extension Conference in 1994-1995, which I also attended and reported on. In view of the political relationship between the NPT and CTBT, discussed in later chapters, my close involvement with both sets of negotiations was crucial for this thesis. In addition, I also observed and participated in some of the meetings on landmines (as they developed from a civil society initiative into the government-led Ottawa process), and on the CWC, as well as attending periodic sessions of the Ad Hoc Group of States Parties to the 1972 Biological and Toxin Weapons Convention (BWC), convened to negotiate a verification protocol to strengthen the international ban on bioweapons. Taken together, such meetings were useful for developing my understanding and analysis of more general patterns and questions relating to multilateralism in arms control.

⁵⁸ Feminist theory argues the relevance of the "intellectual autobiography" of the researcher. As an activist I had worked for many years in grassroots disarmament campaigning. From 1988-92 I served as the Greenpeace International Test Ban Coordinator, then the Disarmament Coordinator, and lastly the Plutonium Coordinator. Having an interest in the outcome of research does not, however, equate with bias, or, for that matter, distortion or misreporting. I was conscious of there being different perspectives on states' positions, motivations, strategies and interactions, and I tried to understand these complexities and report as fairly as possible on positions, events and developments to the world outside Geneva. I also worked in the knowledge that many of my reports were read by the diplomats and protagonists themselves, and by officials in their missions and capitals, and that doors would close on me if I was perceived as reporting "falsely" or distorting "facts". L. Stanley, "Biography as Microscope or Kaleidoscope?", in D. Farran et al (eds.), *Writing Feminist Biography, Studies in Sexual Politics* 13/14, (Manchester: University of Manchester, 1985). For wider discussions of the feminist challenge and contribution to political science and international relations theory, see Christine Sylvester, *Feminist Theory and International Relations in a Postmodern Era*, (Cambridge, Cambridge University Press, 1994); Sandra Whitworth, *Feminism and International Relations*, (New York: St Martin's Press, Inc. 1997); Rebecca Grant and Kathleen Newland (eds.), *Gender and International Relations*, (Bloomington IA: Indiana University Press, 1991); Robert O. Keohane, "International

Relations Theory: Contributions of a Feminist Standpoint", *Millennium* 18:2 (1989), pp 245-253; and Wade L. Huntley, "An Unlikely Match? Kant and Feminism in IR Theory" *Millennium* 26:2 (1997), pp 279-320.

⁵⁹ Robert W. Cox, "Social Forces, States and World Orders: Beyond International Relations Theory", *Millennium*, 10:2 (1981) p 128.

⁶⁰ For a useful discussion of the dilemmas of the participant-observer, see Sasha Roseneil, "Greenham Revisited: Researching Myself and My Sisters", in Dick Hobbs and Tim May (eds.), *Interpreting the Field*, (Oxford: Clarendon Press, 1993) pp 177-208. Since I had chosen to cover the CTBT negotiations as an advocate a few months before embarking on my Ph.D. programme at LSE, this might also qualify as an example of "opportunistic research", though no less valid for that. See J. Reimer, "Varieties of Opportunistic Research", *Urban Life*, 5:4 (1977) pp 467-77.

⁶¹ See, for example, Steve Smith, "Reflectivist and constructivist approaches to international theory", in John Baylis and Steve Smith, *The Globalization of World Politics*, second edition (Oxford: Oxford University Press, 2001), pp 224-249.

⁶² Jaap Ramaker, Chair of the Nuclear Test Ban Committee for 1996, reportedly called me 'the NGO ambassador' during an informal meeting with journalists in August 1996. Although in an interview in July 2001 he could not remember making that specific remark in public (as reported to the author at the time), Ramaker confirmed the essence conveyed by that perception of my role. Jaap Ramaker, Interview with the author, Vienna, July 16, 2001.

⁶³ To this extent, Heisenberg's recognition that in physics the act of observation influences the event or object which is being observed, applies to empirical observation and analysis.

⁶⁴ For example, in analysing China's positions, I have referred to a monograph written by Col. Zou Yunhua, a member of the Chinese delegation in Geneva. See Zou Yunhua, *China and the CTBT Negotiations*, (Stanford CA: Stanford University Center for International Security and Cooperation, 1998). This monograph, written after the negotiations ended, quotes me frequently as a source. While it must be recognised that it may be easier for diplomatic participants to refer to an outside source for what happened than to risk falling foul of national security classifications or restrictions, and such quoting can be taken to mean that the writer endorses the accuracy of the source, it is also important to avoid setting up a self generating or self justifying loop of unsubstantiable supposition.

⁶⁵ I arranged frequent meetings with ambassadors from all sides of the negotiations and the various "Friends of the Chair" appointed for specific issues like entry into force, on-site inspections, and so on. These were generally held in the respective diplomatic Missions. In parallel, I made less formal arrangements to talk with more junior delegation members and the scientists working on verification and associated technical issues, including the Group of Scientific Experts to Consider International Co-operative Measures to Detect and Identify Seismic Events (GSE), which had been meeting since 1976, under the auspices of the CD and its predecessor (the CCD), with a mandate to conceptualise and test an international seismic data-exchange system. Such meetings were likely to be held in the Press Bar or Delegates Lounge of the *Palais des Nations*, or in one of the cafés nearby. Through these meetings, and also by checking the empty meeting rooms after the delegates had left, I managed to obtain most of the important working papers. These were not, strictly speaking, available to the public, and could not be obtained from the CD Secretariat; but neither were they regarded by most delegations as private or classified. Indeed, many diplomats were surprised to be told that I was not entitled to the working papers by right, but relied on their discretion. The diplomats' lack of knowledge about such CD rules was clearly demonstrated during my first meeting, in May 1994, with one of the P-5 ambassadors, who accused me of not representing his country's position properly or explaining what he had put forward in his statement to the NTB Committee. I responded that he had made that difficult by ignoring my weekly requests for an interview and that his statement was not available to the public because it had not been delivered in a CD plenary. Once we had cleared up the misunderstanding, he made sure that I received copies of his country's working papers directly from the mission. From then on, I was granted meetings with him or other delegation members whenever I requested them.

⁶⁶ When diplomats met with me because they wanted to find out what was going on, there was a reverse flow of information, from observer to (ostensible) participant, although it is unlikely that this affected the negotiations in any meaningful way, as such representatives were less likely to have any influence on the negotiations and I tended to meet with them less frequently than with those who rewarded my attention with useful information.

⁶⁷ There was nothing wrong in my being seen as a source of information, as it provided those delegations with an incentive to keep meeting with me, but it was important for me to be vigilant regarding the motives of the questioner and to draw clear boundaries around the information I was prepared to give: generalised speculation on concerns and trends, rather than specific indications of

intentions or views that I might be aware of. It was necessary to be cognisant of the possibility of false information, either through the ignorance of the interlocutor or as a deliberate and political attempt to deceive. After falling into a trap at least once, early on, when I discovered too late that I had been deliberately fed false information in the hope that my reporting of it would embarrass another delegation (a regional rival to my informant), I was even more careful to test information received from one source by means of questions posed to others.

⁶⁸ If I misused information or identified the source, my credibility and the relations of trust necessary for this kind of research would have been undermined, with the likely consequence that the most useful sources of information and insight would have dried up.

⁶⁹ Where I had been the sole nongovernmental watcher for much of the negotiations, by July 1996 I was joined by a handful of others, chiefly representatives of Greenpeace International, the Women's International League for Peace and Freedom, and the American Peace Test (a Nevada-based group). Some of the Geneva press corps had also begun to take interest, and would come to me from time to time to check what was happening and whether there was a good story to report. Towards the very end, a large group of (mainly) Japanese journalists gathered, replete with cameras and microphones. Every time a senior diplomat emerged, they would rush forward to mob him (or her), making my job of quiet questioning very difficult in the endgame. There were novel ways around this. One ambassador – a woman – made a point of asking me to direct her to the Ladies lavatory, leaving behind the Japanese journalists (all men at the time). She then updated me on the arguments and developments taking place in the meetings.

⁷⁰ The first was a crimson pamphlet called "A Comprehensive Test Ban Within Reach", and designated ACRONYM booklet No. 1. At about the same time, one of the consortium of NGOs whom I represented began bringing out a fortnightly publication, *Nuclear Proliferation News*, which was posted to all the Geneva delegations. The early mailing list included a number of international NGOs and policy-formers in the US State Department, Pentagon, the US Arms Control and Disarmament Agency (which was semi-paralysed, under constant threat by that time of being folded into the State Department, which did eventually happen, in 1999), the UK Foreign and Commonwealth Office, and various elected representatives in the Senate and House and the UK Houses of Parliament. At first the editor, Sean Howard, compiled reports based on my weekly emails, but within a few months we decided it was better for me to write specifically for the publication, combining developments in the CTBT negotiations with the NPT and other UN-related disarmament issues. In addition, *Nuclear Proliferation News* compiled news reports of wider developments in international security and arms control, and reprinted excerpts from key documents or statements. In January 1996, the rather ad hoc publication *Nuclear Proliferation News* was supplanted by a monthly journal, *Disarmament Diplomacy*, under the same editor, Sean Howard. The combination of regularly updated summaries of the CTBT negotiations and statements made in Geneva with Howard's well-selected, abbreviated compilations of international security developments proved irresistible to diplomats and officials with little time to trawl through masses of cables and news reports. The mailing list was extended to include many UN Missions in New York and officials in defence and foreign ministries in around 40 countries. NGOs, some of whom it later transpired forwarded them to officials in their government, continued to receive email updates on a weekly basis (or more frequently, as events warranted), rising to daily reports during the highly charged endgame stand-off with India.

⁷¹ Hampson, 1995, p 21.

⁷² Tapes were made of interviews with: Victor Slipchenko, Vienna, October 8, 1999; Arundhati Ghose, New Delhi, February 20, 2000; Sha Zukang, Beijing, October 13, 2000; Stephen Ledogar, New York, November 5, 2000; Grigori Berdennikov, Vienna, July 17, 2001; Jaap Ramaker, Vienna, July 16, 2001; and Sir Michael Weston, June 11, 2002. Permission was given for these interviews to be taped for background and corroboration purposes, and the thesis does not therefore use direct quotes from them. The interviews were granted on the basis that the tapes would not be transcribed or published, but they can be made available for examination purposes if required, on a confidential basis. At times I have also (as part of my job) been able to follow up informally (untaped conversations) to clarify certain issues with some of the key ambassadors or other CTBT diplomats. None of the contemporaneous interviews and conversations undertaken during the negotiations were taped, for reasons of confidentiality and diplomacy, although I retained contemporaneous notes and emails based on information gained through such conversations.

Chapter Two

Multilateralism and Nuclear Diplomacy

In January 1994, at the start of the test ban negotiations in the Conference on Disarmament, John Holum, Director of the US Arms Control and Disarmament Agency (ACDA), stated: *“The CD is the only multilateral forum to address global arms control and disarmament issues on a continuing basis. Its membership covers every region of the globe and reflects a wide range of concerns and interests. We have all come to accept the CD as both a market place of ideas and a place where nations get down to practical business and conclude the agreements that enhance international security”*.¹ Such a ringing endorsement glossed over the structural features and political divisions that made it possible for the United States and others to block CD negotiations on the CTBT for decades.

In the UN system, including the CD, multilateral negotiations are assumed to be conducted among a number of states with asymmetric power and interests. Depending on the circumstances, other bodies, such as intergovernmental organisations (IGOs) and NGOs may also participate, but usually only as observers. In considering nuclear diplomacy, Stephen Krasner’s list of causal factors for regime formation offer a useful point of departure. In addition to power and interests, he identifies: diffuse norms and principles; usage and custom; and knowledge.² This chapter incorporates Krasner’s factors in laying the conceptual groundwork for the thesis, with consideration of the actors and their strategies and tactics and the forum and its structure and rules.

Seeking Convergence

Multilateral arms control is usefully characterised as a mixed-motive interaction to resolve cooperation problems, where parties have both shared and conflicting interests. As discussed in Chapter 1, realism assumes that negotiated outcomes will result in gains and losses being divided among the parties according to their relative power. Such agreements, based on apportioning benefits and constraints, usually through mechanisms of power or concession trading, are known as distributive. At one extreme, a hegemon or powerful actor might impose a settlement, which the rest

are obliged to accept. Although the solution may involve a division of gains and losses, this kind of unilaterally-imposed fiat does not really qualify as convergence. Of more relevance for multilateralism is “imposed convergence”, when an actor or dominant group determine the parameters or specifics of a solution to a particular cooperation problem. They may conduct distributive negotiations within the privileged group, but others have little say in the outcome. This does not necessarily mean it is to other states’ detriment or that they must be coerced into accepting. The issue may come down to the perceived level of importance of the interests: are they direct or indirect; strategically crucial or marginal? An imposed convergence will be accepted by other actors if the tangible or regime benefits are considered to be greater than the alternative of getting no agreement.³

In what passed for cold-war multilateralism, it was normal practice for the United States and Soviet Union (sometimes also with the United Kingdom) to negotiate between themselves on a treaty text that satisfied their own interests first and foremost; they then presented it to other states for adoption. While there may have been some room for minor adjustments to provide additional incentives to bring target states on board, as happened in the case of the NPT, the majority were expected to take it or face isolation or other kinds of sanctions and pressure. During the CTBT negotiations, the P-5 minilateral negotiations epitomised the NWS’ assumptions that on issues relating most closely to their nuclear capabilities or privileges, such as scope and inspections, the priority task was to agree amongst themselves, following which they expected to be able to impose their preferred outcome on the remaining states. Though this was also the expectation of many NNWS, who had experienced imposed agreements in other diplomatic contexts, the actuality was rather different, as the following chapters show.

A second type of convergence is brought about through multilateral distributive bargaining in which participants regard the payoff structure as fixed or at least relatively inflexible; agreement is promoted through various bargaining techniques, including concession trading and the manipulation of text and meaning. While very common in multilateral negotiations and capable of delivering mutual or regime benefits, this kind of ‘managed convergence’ frequently results in lowest common

denominator agreements where differences are split or the more powerful receive greater benefits.

For much of the cold war, the most influential approach for considering the intersections between cooperation, interdependence and the pursuit of self interest was game theory, which produced interesting insights about cold war arms control and bilateral nuclear deterrence. Even when given depth to illuminate more complex scenarios through the incorporation of multilevel games, iteration, anticipated payoff structures, mutual adjustment of perception and decisionmaking over time, and consideration of potential long term benefits (the so-called “shadow of the future”), game theoretic approaches have proved less well suited to cooperation scenarios with multiple players. In particular, the necessarily parsimonious assumptions of rationality and usual binary choice between cooperation and defection oversimplify cooperation complexities and suppress the role of variables that may be crucial to an actual outcome.⁴ With these reservations, Prisoners’ Dilemma and Rousseau’s Stag hunt have been shown to have relevance for mixed motive negotiations, highlighting how in certain interactions where there is a common interest in cooperating, one or more actors are nonetheless likely to take actions on the basis of narrow perceptions of self-interest that result in a detrimental outcome for everyone.⁵

It is not necessary for the purposes of this thesis to explore the practices and critiques of game theory in any detail, but two consequences of its influence are relevant for this study of convergence in multilateral negotiations. Game theory assumes that actors’ decision-making is rational, that interests are essentially fixed and in competition, and that there is a known or bounded payoff structure with shared or at least similar perceptions of the rules and choices. As James Sebenius has noted, such assumptions foster adversarial interactions and suppress important factors like players’ perceptions, uncertainty, learning and change.⁶ Such premises restrict consideration to how to divide the pie (distributive convergence). A more mutually advantageous solution, however, may lie in integrative convergence, which requires negotiators to consider how the pie itself can be enlarged or changed. Some or all of the negotiators could even decide to go and bake a different pie and share that instead.⁷

Integrative bargaining became associated with the negotiation-analytic approach of Duncan Luce, Howard Raiffa and Thomas Schelling⁸, and was defined by Richard Walton and Robert McKersie as a problem-solving approach that seeks to expand or change the zone of possible agreement and so present a different range of options for convergence than first appear to be on the table.⁹ Recent theorists have associated integrative convergence with the cognitive and communications strategies of civil society and epistemic actors, who seek to change how actors view the problem or perceive the value and achievability of potential solutions.¹⁰ In contrast to the zero-sum assumptions of distributive convergence, integrative convergence does not regard expectations and interests as fixed, but as factors that can be manipulated or altered by teaching or recasting knowledge, values, norms and ideas. In the next section, I expand on Chapter 1's brief introduction to civil society, and consider its relevance for understanding multilateral convergence.

Knowledge, Norms and Ideas: Post Cold War Concepts of Civil Society

Civil society, and its variants 'global civil society' and 'transnational civil society', enjoyed a revival in the 1990s, as theorists sought to understand the "widening influence of private citizens in national policymaking and in the conduct of international relationships".¹¹ In accordance with intellectual culture and political standpoint, the concepts are employed with shades of significantly different meaning.¹² Traditionally, Marxism used the term to describe institutions and relations regarded as autonomous from state institutions, including trade unions, voluntary organisations, churches, and even households and businesses.¹³ Such depictions have been overtaken by post cold war analyses, which found them too broad to be a useful basis for understanding the ways in which civil society works in the late 20th and early 21st centuries.

Helmut Anheier, Marlies Glasius and Mary Kaldor are representative of an influential school associated with the London School of Economics, which sees civil society as global, with ethical and normative attributes: "the existence of a social sphere... above and beyond national, regional or local societies... something to do with the infrastructure that is needed for the spread of democracy and development: the growth of professional organisations, consumer organisations, and interest groups that span many countries..."¹⁴ M. J. Peterson prefers the term "international civil society",

on the basis that “countries and national borders remain real.”¹⁵ Acknowledging Peterson’s argument, but preferring a term that does not just imply links between and among nations, but emphasises “the border-crossing nature of the links”,¹⁶ I follow Ann Florini’s definition and use of “transnational civil society”. As this CTBT study illustrates, civil society engagement on security issues is still far from global: some parts of the world are seriously underrepresented in international negotiations, including nongovernmental activities; related to this, assumptions made by the ‘global civil society’ theorists about an international convergence of normative understandings are shown to be premature.

Though civil society references are now mainstream, focus in the United Nations and elsewhere has long been on NGOs. Usually thought of as nonprofit ‘businesses’ or ‘charities’, the UN definition of NGO encompasses also private businesses established for profit and their related industrial associations. Though the concept of civil society is still under discussion, it is now more usual to treat the role of industrial or commercial players in influencing national and international outcomes as an analytical category distinct from civil society.¹⁷ Consideration of the roles and strategies of US chemical and pharmaceutical industries during negotiations to ban chemical weapons and strengthen the Biological and Toxin Weapons Convention (BWC) reinforces the argument for making a conceptual distinction between industrial and civil society actors, even though both may be formally classified as nongovernmental by some institutions.¹⁸ Although the normative claims associated with some conceptualisations are left open for analysis, the concept of civil society used in this thesis also excludes nongovernmental and nonstate actors who seek political change through violent and militarised means, such as guerrillas, terrorists, and freedom-fighters.¹⁹ This distinction is not based simply on a value judgement, but has important conceptual underpinnings. In particular, such nonstate actors’ use of violence is the antithesis of common understandings of ‘civil’, epitomised by the usual antonymic juxtaposition of civil and military and the historical association of civil society with “the cultivation of a set of social and political virtues” such as “civility, trust [and] tolerance”.²⁰ In other words, civil society comprises nonstate actors and includes NGOs, but not all nonstate actors or organisations classified as NGOs under current UN rules are part of civil society.

Accepting as part of the operative definition of civil society the exclusion of militarised violence as a strategy or tactic does not entail any normative assumptions of a positive, democratising and progressive role for civil society, in opposition to the state. Such a role may be desirable, but if made intrinsic to the definition of civil society, as implied in much of the work of the global civil society theorists,²¹ it misleadingly closes off lines of inquiry and analysis. Depending on the specific goals and strategies under consideration, civil society, according to the understanding adopted here, may be progressive or retrogressive; it may seek emancipatory outcomes or harness its energies to resist change or promote outcomes that would stabilise the status quo. Civil society does not always oppose government policies or challenge the state; some civil society actors may organise to reinforce the policies of particular governments or opposition parties.²²

To return to Florini's useful definition, transnational civil society may be regarded as encompassing NGOs, informal associations and loose coalitions, "forming... connections across national borders and inserting themselves into a wide range of decision-making processes on issues from international security to human rights to the environment."²³ Two other concepts that are relevant to consideration of the role of civil society in bringing about the CTBT must be introduced here: Peter Haas' "epistemic communities"; and the concept of "norm entrepreneurs" developed by Ethan Nadelmann and Richard Price.

From the 1940s onwards, the role of scientists was particularly important with regard to the test ban case, as highlighted by Emanuel Adler in his study of the development of nuclear arms control during the cold war. Adler's analysis supported concept of epistemic community, defined as "a network of professionals with recognised expertise and competence in a particular domain and an authoritative claim to policy-relevant knowledge within that domain or issue-area".²⁴ With regard to nuclear arms control, Adler notes, however, "[T]hey were one community, yet they were everywhere: dispersed among government bureaux, research organisations and laboratories, profit and nonprofit organisations, university research centres, and think-tanks."²⁵ Epistemic communities intersect with but are not subsumed into civil society.²⁶

Scientists continued to play varied roles in post cold war nuclear arms control as well, but my analysis of the CTBT suggests that though the concept of epistemic communities has proved useful in highlighting the role of experts and specialists, it does not adequately account for the complexity of expert engagement in multilateral negotiations. As part of this thesis, careful attention has been devoted to the different parts played by experts and actors with specialist knowledge and authority. These roles and the influence of epistemic actors on facilitating convergence and fostering norms and knowledge will be considered in more detail in the following chapters on prenegotiations and the dynamics of convergence with regard to scope, verification and entry into force. In Chapter 9, problems for Haas' theory arising from the CTB study will be discussed, together with consideration of the contribution of epistemic actors to the processes of convergence.

Where Haas developed the concept of epistemic communities to highlight how cognitive authority is deployed to shape outcomes, Nadelmann coined the term "transnational moral entrepreneur" for actors and groups that mobilise public opinion and political support for "moral" objectives in order to build prohibition regimes that involve "intrasocietal interactions as well as interstate relations".²⁷ Using examples ranging from slavery to drug trafficking and prostitution, Nadelmann identified four stages of prohibition regime formation. At first, the targeted activity is accepted or at least regarded as legitimate under certain conditions or for certain groups; during the second stage the activity comes to be redefined as a problem (and often an evil); by the third stage, opponents are agitating for the suppression and criminalisation of the activity by all states; and if they are successful, the fourth stage sees the establishment and development of a global prohibition regime. The second and third stages in particular are marked by the growth and organised influence of moral entrepreneurs. Usually originating within civil society, and often associated with particular religious, political or humanitarian views, these moral entrepreneurs engage transnationally to mobilise public opinion and political support, and lobby governments within their own countries and abroad.²⁸ Nadelmann made only a passing reference to regimes dealing with weapons of mass destruction, and it was left to Richard Price to consider how Nadelmann's argument might apply to a weapons prohibition regime. Looking at the case of landmines, Price goes beyond Nadelmann's emphasis on morality and focuses on the role of nongovernmental experts and organisers in promoting

particular norms in order to influence governments by changing the environment and payoff matrix within which they make their political calculations.²⁹ Price prefers the term “norm entrepreneurs”, arguing that these experts and organisers become influential by using their ability to “engage the policy process and engage in moral proselytising through persuasion”.³⁰ As such, Price also differentiates the role of norm entrepreneurs from the “authoritative claims of scientific knowledge” of epistemic communities, to whom “governments turn for knowledge in times of uncertainty”.³¹ In adopting the concept of norm entrepreneurs, this thesis accepts as useful Price’s refinement of Nadelmann’s original theory.

Civil society organisations, networks and actors may be constituted nationally, regionally or internationally, and may take a variety of forms. Though realists and many analysts of arms control and international security ignore or dismiss civil society, neoliberals and new multilateralists have incorporated the agency of nonstate actors in their theorising. They disagree about the nature, mechanisms and significance of civil society’s influence on national and international decisions and events, however, and little has been done to develop criteria for assessing the impact and effectiveness of civil society. Keith Krause has noted the problems inherent in trying to assess the power of diverse nonstate actors using the measurements of state power. In his analysis of norm building in the recent case of the UN Programme of Action to Prevent, Combat and Eradicate the Illicit Trade in Small Arms and Light Weapons, Krause suggests that influence can be exercised directly, as input into a particular outcome, or indirectly, through the structural power associated with agenda setting and the structuring of the debate.³² In evaluating the effectiveness (or otherwise) of civil society, it is necessary to define the issue, context and nature of the influence under consideration, as well as the level on which NGO influence is alleged to be exercised.³³ One approach, suggested by Krause, is to divide the utility and impact of civil society actors into effective output, such as media coverage, and effect on outcome, such as agenda setting, policy formation and decisionmaking. Another approach is to consider “voluntaristic”³⁴ power, measured in terms of constructing political will, shaping perceptions and through them, state interests. Recognising the difficulties in attributing causality and measuring the influence and impact of specific actors in negotiations, this thesis focuses on states’ expectations and interests, regime

principles and norms, and how these are identified, shaped and embedded through the strategies and actions of different types of civil society actors.

This brief discussion of civil society has only brushed the surface of a growing area of relevance for international relations. My intention here was to introduce the concepts and debates that are most relevant for this thesis on multilateral negotiations, and we turn now to consider the principal legal unit in security negotiations: states.

States and Multilateral Nuclear Arms Control

The UN system, by legal and diplomatic convention, is state-centric.³⁵ In the CD and the United Nations as a whole, states are treated as sovereign, legal entities, abstracted from the politics and identities of governments and nations. This accords with the rational actor model of states shared by realists and neoliberals. Realists, however, view territorially sovereign states as *the* significant actors in international relations, with nonstate actors such as corporations, NGOs and intergovernmental institutions accorded, at best, a peripheral or secondary role. For neoliberals the state is a very significant actor, but its power is mediated by various other actors and factors. New multilateralism challenges this rationalist view of states,³⁶ and instead portrays them as “conditional entities”,³⁷ which theory and diplomacy need to conceptualise not as consistent units, but as representative institutions “constantly subject to capture and recapture, construction and reconstruction” by social and political actors, through elections, coups, or other forms of governmental change.³⁸

In view of the complexities inherent in multilateral negotiations among large numbers, and the institutionalised assumptions of formal international diplomacy structured around interstate relations, it has been necessary to adopt certain conventions to facilitate narrative coherence and readability. A country’s name is widely accepted as a convenient shorthand to denote the policies, positions and interactions of leaders and negotiators. The country’s delegation and diplomats are taken to represent the policies of the recognised states behind whose name-plates they sit. UN recognition and sovereign status are contingent on certain criteria, however. In one example, when the CTBT negotiations commenced in 1994, the referent ‘Yugoslavia’ applied to a disintegrating federation with a politically contested identity. Despite retaining the name-plate signifying formal membership of the CD,

the UN system did not permit anyone to represent Yugoslavia and participate in CD deliberations, including the test ban negotiations.

Utilising the diplomatic conventions of nomenclature, as I have done, does not imply adoption of the unified rational actor model. For the purposes of this thesis, a country's name, such as 'the United States' or 'India', is used as a collective-noun referent to the administration in power at the time under consideration. If an administration is changed, through election or some less democratic process, the state's objectives and strategies may correspondingly change. This was clearly demonstrated when Jacques Chirac took power after the French elections of May 1995. Even a general election campaign – especially if it is close fought – can have a significant effect on a government's policy, as illustrated in India in the year leading up to the election victory of the pro-nuclear Bharatiya Janata Party (BJP) in mid-1996. The degree to which a state's objectives and posture change depends in large part on the magnitude of the political differences between the outgoing and incoming administrations. If the distinctions are relatively weak, a change of party or government may have minimal effect on foreign policy. A coup or the election of a party with political and ideological precepts that are fundamentally different from those of the preceding government can result in a very significant shift in foreign policy or negotiating posture.

Power struggles among the multiple domestic actors, agencies and pressure groups (bureaucratic, diplomatic, civil, military or political) may also shift foreign policies over time, altering a state's negotiating positions.³⁹ Whilst it is not the purpose of this thesis to examine how different domestic actors and agencies interact in determining foreign policy, some consideration is given to domestic/international/transboundary interactive processes, including strategies and influence from other states and actors associated with civil society.⁴⁰ It is important to recognise that there is seldom a one-way linear process from determination of a state's policy and position to instructions from capitals and implementation by diplomats in the field. Though charged with the task of carrying out instructions, there is a frequently-observed feedback loop between the perceptions and diplomacy of practitioners in the forum and the decision-making processes at home.

Multilateralism assumes some level of asymmetry among states; nor is it necessary that all participants possess the weapons in question. In the case of landmines, possession was diffused among a wide group of states from all regions and political groupings.⁴¹ In other multilateral disarmament or arms control negotiations, such as the BWC and the CWC, the weapons under question may be possessed by a small subset rather than a majority of states. Nevertheless, the participants would all claim a security interest in the outcome of the negotiations. What distinguishes these examples of asymmetric possession from the case of nuclear weapons is that there existed no differential international legal bar on possession or development of the weapons prior to the relevant treaty negotiations. National and economic resources, threat assessments, public or policymakers' preferences, or some other set of conditions or factors determined whether one state rather than another developed biological or chemical weapons; but given the appropriate conditions, any of them could have legally chosen to do so up to the point of concluding and signing the prohibition treaty.⁴² The implications for nuclear arms control of the differentiation made in the NPT between nuclear weapon states and non-nuclear weapon states will be considered below.

The terms bilateral, trilateral, and plurilateral convey the sense of negotiations among a certain number of parties with direct interests. Multilateral arms control coordinates agreement among a more diverse international collection of parties, including some who have no (or negligible) possession of the weapons concerned. Many diplomats and a growing number of scholars also employ the term 'plurilateral', used to describe negotiations among states that all possess the weapons under consideration, because it enables a further useful distinction to be made, especially in relation to arms control. An example would be nuclear arms negotiations held solely among the nuclear weapon states.⁴³ This distinguishing of plurilateral from multilateral negotiations should not be confused with Miles Kahler's concept of "minilateral" collaboration among powerful states *within* multilateral institutions or processes, which the thesis considers in relation to P-5 sidebar negotiations.⁴⁴

Krasner put self-interest first in his list of causal factors for regime formation, and the relationship between weapons possession, interests and a state's engagement and leverage in multilateral arms control is an important consideration for this thesis. The

fundamental division in nuclear arms control and disarmament negotiations is between states that have nuclear weapons and those that do not. The following section examines these demarcations and considers a number of subsets in between.

Nuclear Capabilities and Interests

As noted in the introduction, five countries are defined as ‘nuclear weapon states’ under Article IX.3 of the NPT: Britain, China, France, Russia (as successor to the Soviet Union) and the United States. These five are also the permanent members of the UN Security Council, a coincidence that is politically problematic and, as India’s nuclear debate has indicated, may be a proliferation driver for some countries.⁴⁵ Though some NWS have at time appeared ambivalent about the linkage, they are enhanced by the power, status and symbolism of their role as permanent members of the Security Council and collaborate together as the P-5 in parallel with their interactions as NWS. The congruent roles therefore have implications for the P-5 interactions in defence and security relations, with each other and with other states, as the CTBT study illustrates on several levels.⁴⁶

Three states possess nuclear weapons programmes outside the NPT – India, Israel and Pakistan. In May 1998, India and Pakistan carried out a number of underground nuclear test explosions, thereby fully abandoning any pretence of ‘nuclear ambiguity’, a form of neither-confirm-nor-deny doctrine that had enabled the two South Asian states to pursue nuclear programmes while also joining with nonaligned NNWS when it suited.⁴⁷ Following the tests, India declared itself a nuclear weapon state.⁴⁸ Though it is not disputed that India possesses nuclear weapons, its self-declaration does not alter the fact that India remains thirty years outside the NPT’s legally recognised definition of a nuclear weapon state. This thesis reserves the term ‘nuclear weapon state’ (and the abbreviation NWS) for the P-5 only. Although the negotiations took place before India and Pakistan openly declared themselves, the commonly heard term ‘threshold state’ had ceased to be appropriate by 1994. Israel, as far as is known, passed beyond nuclear capability into actual possession of nuclear weapons as early as 1970.⁴⁹ To distinguish these three states from the defined NWS while acknowledging that they have passed beyond the threshold of just having nuclear weapon capabilities, I refer to them as *de facto* nuclear weapon possessors (D-3).

Clumping the rest together as NNWS enhances readability, but closer analysis shows that there are at least four kinds of NNWS: aspirants with nuclear ambitions and suspected clandestine programmes; nuclear insurance states with sophisticated levels of nuclear technology; nuclear allies; and the genuinely non nuclear weapon states, which do not turn to nuclear deterrence for their defence and have no technically relevant capabilities to develop nuclear weapons now or in the future.⁵⁰

The ‘nuclear aspirants’ are NPT parties that are persistently suspected or have been proved to have been pursuing nuclear weapon programmes in violation of their treaty obligations. During the CTBT negotiations four states were generally included in this category: Iraq, North Korea, Iran and Libya.⁵¹ Iraq and North Korea have been well documented; despite its protestations to the contrary, Iran was also believed to be “actively engaged in seeking nuclear weapons”.⁵² At time of writing, Iran played the game by formally meeting the IAEA’s basic inspection requirements. After the discovery of Iraq’s clandestine nuclear programme in 1991, NPT parties determined to strengthen the safeguards arrangements, though they lacked the political will to address the contradictions in Article IV that Iraq, Iran and others played off against their Articles II and III NPT obligations. Negotiated as Part II of the IAEA’s Programme to Strengthen the Effectiveness and Improve the Efficiency of Safeguards (known as Programme 93+2), an Additional Protocol was concluded in 1997 and states were strongly encouraged (but not legally required) to adopt it on top of their bilateral comprehensive safeguards agreements with the IAEA (INFCIRC/153) required under the NPT’s Article III. The Additional Protocol was intended to give the IAEA better tools to detect undeclared activities, including the right to documents and information covering the whole nuclear fuel cycle and more extensive access, including to sites not formally declared as nuclear fuel cycle related facilities. For the purposes of this thesis, the classification of a state as a nuclear aspirant does not of itself imply acceptance or proof that these states are actually pursuing nuclear weapon programmes. It does, however, reflect a general and persistent international concern that they are not in conformity and compliance with their obligations as NNWS, and that their nuclear ambitions affect their postures and strategies on nonproliferation and arms control questions.

The 'nuclear insurance states' are NPT parties regarded by the IAEA as NNWS in good standing, but they have declared capabilities and materials that potentially make nuclear weapons a feasible option, should they want to exercise it in the future. These are the small number of NPT states parties that have developed sufficient production capacity for plutonium and/or highly-enriched uranium and have the technology to build and deliver nuclear weapons. Countries regarded as having nuclear insurance capabilities include: Algeria, Argentina, Brazil, Germany, Japan, Republic of Korea, South Africa and Taiwan. Unlike the nuclear aspirants, the nuclear insurance states are believed to subject all their nuclear fuel cycle facilities to IAEA safeguards and are not thought to have current nuclear weapon programmes or ambitions. If their political or security environments altered significantly, it is believed that they have hedged their bets sufficiently to be able to make nuclear weapons in a relatively short period of time.⁵³ Belarus, Kazakhstan and Ukraine, which could have retained their nuclear weapons as successor NWS to the Soviet Union, might be included in this category, but on balance are not.⁵⁴

Finally, nuclear allies are NNWS in alliance agreements with NWS that entail a degree of joint military policies and planning encompassing nuclear weapon use. Some, but not all, have nuclear weapons on their territory. Nuclear allies accept the concept of nuclear deterrence, which differentiates them from NNWS with no nuclear umbrella, particularly members of regional nuclear weapon free zone agreements. That alliances such as NATO and the US-Japan Security Compact influence the policies of their NNWS members is borne out in voting on nuclear issues in the UN First Committee (Disarmament and International Security),⁵⁵ and is important to consider in relation to the CTBT negotiations.

These nuclear weapon related subsets are not mutually exclusive. Japan and Germany, for example, participate in nuclear alliances but have also developed capabilities that warrant their classification as nuclear insurance states. The examples of Argentina, Brazil and South Africa, as well as Belarus, Kazakhstan and Ukraine, show that the categories are not fixed, and it is possible to move from one to another, in accordance with changes in policies and capabilities. A wider subset on the nuclear spectrum that became central to the CTBT's entry into force (see chapter 8) comprises those states defined by the IAEA as possessing nuclear power or research

reactors. This includes the P-5, D-3, nuclear aspirants and nuclear insurance states, some but not all nuclear allies and a handful of other NNWS.

It has been important to classify these distinctions between the declared NWS and the various subsets on the spectrum towards NNWS because it is relevant to this thesis to consider the relationship between nuclear interests and the expectations, aims, postures and strategies of different states in the CTBT negotiations. I now turn to consider the structure and rules of the negotiating forum, the Conference on Disarmament, two aspects of which had particular bearing on the CTBT outcome: the rule of consensus and the group system.

The Conference on Disarmament

On August 10, 1993, after years of fruitless discussions, the CD was finally in a position to give its ad hoc Committee on a Nuclear Test Ban a negotiating mandate. The decision stated that “as the sole multilateral disarmament negotiating forum of the international community” the CD was the appropriate forum for negotiating a CTBT.⁵⁶

For much of its history, the CD and its predecessors have been plagued by persistent problems of participation, management and decision-making. To understand why, it is useful to consider its genealogy. The CD is the successor to various Geneva-based arms control bodies dating back to 1960.⁵⁷ It took the name by which it is known today, the Conference on Disarmament, in 1984. According to Inga Thorsson, Sweden’s ambassador to the first multilateral UN Special Session on Disarmament (UNSSOD I) in 1978, “the very idea that international security and disarmament are of direct interest to all nations, and that collective action is required, was founded by the Hague Conferences.”⁵⁸ UNSSOD I was an important watershed in the history of multilateral disarmament efforts. The consensus final document stated: “[T]he nuclear weapon states have the primary responsibility for nuclear disarmament and, together with other militarily significant states, for halting and reversing the arms race. It is therefore important to secure their active participation.”⁵⁹ To this end, UNSSOD I gave permanent establishment to the Geneva Conference, including new rules of procedure. In setting out its terms of reference, paragraph 120 specified that the CD would: conduct its work by consensus; adopt its own rules of procedure; adopt its

own agenda taking into account the recommendations made to it by the General Assembly and members' proposals; submit reports to the General Assembly at least once a year; and permit open public access to observe its plenary meetings, unless otherwise decided.⁶⁰

The CD is regarded as an autonomous body, although it has a close relationship with the United Nations. The CD meets on UN premises, is serviced by UN personnel, and its budget is included in the UN budget. The Secretary-General of the CD is appointed directly by the UN Secretary-General and acts as his personal representative. The CD takes into account UN General Assembly resolutions on disarmament, especially where consensus has been obtained. As the final phase of the CTBT negotiations revealed, it is also taken for granted that the CD should transmit the texts of any treaties or agreements to the General Assembly to be formally adopted and then opened for signature. The US-Soviet co-chairs of its predecessors were replaced with a presidency that rotated among the CD member states every four weeks in alphabetical order. France joined in 1979, followed, a year later, by the People's Republic of China, bringing the membership to forty.⁶¹ As a result of the disintegration of the Soviet Union and political changes in a number of Eastern European countries, by the time the CD opened negotiations in 1994, its membership stood at 38, with Yugoslavia forbidden to occupy its seat.⁶² In June 1996, a long-awaited induction of 23 new members was finally agreed, bringing the membership formally to 61.⁶³

Consensus

The CD is a multilateral body of rival regional and international powers that must, according to Rule 18 of its rules of procedure, "conduct its work and adopt its decisions by consensus."⁶⁴ The CD interprets Rule 18 as conferring the power of veto on every member.⁶⁵ Objectors to a decision are not obliged to give their reasons for opposing. The realist justification for retaining the CD rule of consensus is that states cannot be expected to accept the application of arms control or disarmament constraints unless they have first agreed to them. Since any restraints on military capabilities affects considerations of national security and sovereignty, which realists privilege above other matters, each state must directly consent to them through participating in consensus. Neoliberals would emphasise that consensus promotes a

sense of shared responsibility in the process of arms control and therefore of joint ownership in the decisions, thereby enhancing confidence, compliance and implementation. As the US Senate rejection of CTBT ratification in 1999 demonstrated, the second does not necessarily flow from the first. In multilateral conferences with a specific objective and timeframe, consensus is more likely to produce frenetic endgame negotiations, sometimes requiring that the clock be 'stopped'.⁶⁶ Alternatively, consensus may foster managed convergence on the basis of bland compromise, lowest common denominator or excessively qualified agreements.⁶⁷

The CD interpretation of consensus is more rigid than it needs to be. Consensus could be interpreted and applied in ways that promoted shared responsibility for decision-making without the 'hostage-taking' implications of requiring unanimity for each and every decision. As civil society groups working with consensus have long known, there must be effective procedures for the groups to manage decision-making and for the individuals in the group to register their views of support, opposition or acquiescence in an accountable manner. Rule 18 is currently interpreted as requiring that even the agenda, programme of work, presidential statements, and the establishment and chairs for ad hoc committees require consensus of the tightest kind. The procedures for registering views other than agreement are woefully inadequate. One consequence of this is that the consensus rule is manipulated for a variety of purposes. Instead of being used to enable inclusive agreement, it is as likely to be employed by regional or political adversaries to play games against each another, allowing individual governments to deadlock the forum's work by exerting linkages between issues or agreements that may have little intrinsic connection at all. The rotating presidency and Bureau (comprising the past, current and next presidents, the group coordinators and China) and the system by which CD members organise themselves into three formal groups are supposed to manage the flow of information, exchange of views and decision taking. Instead, however, the structure of decision-making in the CD makes it very easy for objectors to hide behind others and avoid justifying their positions.

The rule of consensus, insisted on by the superpowers to ensure that they could not be outvoted by lesser states, can give any delegation the formal power to prevent work

ever getting started.⁶⁸ In practice, consensus still serves the interests of the major powers and a logjam is allowed to persist only when the dominant CD members are content to permit a continuing impasse (regardless of their public relations statements to the contrary). If a veto is exerted by lesser delegations when the major powers have decided they want to negotiate, behind-the-scenes pressure or chequebook diplomacy will be used to shift the offending log. In an example of this from the early days of the CTB negotiations, the United States leaned swiftly on the British delegation to lift its opposition to the nomination of Mexico's controversial ambassador, Miguel Márín Bosch, to chair the Nuclear Test Ban Committee. Washington wanted no embarrassing delay to the negotiations that President Clinton had publicly endorsed. In effect then, under its nondiscriminatory exterior, the rule of consensus hides informal rules of thumb concerning not just the degree of positive agreement required (as opposed to abstaining acquiescence), but which of the parties are most important and *must* be included.⁶⁹

The CD's Group System

Intended to manage and facilitate CD proceedings, CD members have for decades been organised into three groups, with China as a 'group of one'. As can be seen from their names, the groups represent cold war political affiliations, outdated even at the time of the CTB negotiations: The Group of Western States and Others; the Group of Eastern European States and Others; and the G-21 Group of Non-Aligned States and Others.⁷⁰ These are subsets of groupings found in wider multilateral fora and the United Nations.⁷¹ Since the cold war there has been some transferring of group alliances in the CD.⁷²

The CTBT negotiations exposed the degree to which the group system had already become dysfunctional, with little relevance except for procedural ritual. The G-21 issued joint but generally declaratory statements on issues of substance, unlike the Western Group, which – with three NWS among its number – did little more than coordinate procedural decisions. The Eastern European Group seldom met, unless to nominate a candidate for one of the posts. The contradictions inherent in having two of the *de facto* nuclear weapon possessors in the G-21 were illustrated on several occasions during the CTBT negotiations. G-21 statements tended towards rhetoric and the reiteration of principles, often harking back to UNSSOD I. If they tried to

address real disarmament prospects and practicalities, the G-21 faced failure. For example, in the final year of negotiations members of the G-21 sought to push collectively for preambular language identifying the treaty's objectives as including an end to the modernisation and qualitative improvement of nuclear weapons. India refused to work with the rest of the G-21 on this, as it had its own strategy with the P-5 to play out. Without India, the G-21 initiative had little chance of engaging the P-5. Additionally, the nonaligned states' poor coordination and divisions over the 1995 NPT Review and Extension Conference spilled over into the CD, as did the NPT outcome in general, discussed in later chapters.

Ideas have been put forward for alternative arrangements, such as having similarly-sized regional groupings for allocating offices and posts, and relying on issue-based groupings for managing substantive decision taking.⁷³ Some regional alliances have been growing in influence since the end of the cold war. The European Union, for example, often determines its collective decisions in advance of Western Group discussions, to the irritation of middle powers consigned to a minority within the group, such as Japan, Canada, Australia and New Zealand. US power is such that Washington is usually consulted beforehand by the EU, while Turkey and the Republic of Korea normally vote with the United States. During the CTBT, such joint EU decisionmaking was not much in evidence on issues of substance, but the EU exerted regional influence to ensure the appointment of the Netherlands ambassador, Jaap Ramaker (against the rival claims of Australia's Richard Starr), first to chair one of the working groups of the Nuclear Test Ban Committee in 1995, and then to chair the Committee itself for the final year of negotiations. It was clear at the time that France was primarily responsible for using the EU to ensure that Australia was kept out of any key post.⁷⁴ Within the NAM, too, regional groups such as the League of Arab States or the Association of Small Island States (AOSIS) can coordinate policy to influence the larger grouping, as both did during the NPT conferences of 1995 and 2000. Regional 'like-minded' groups in the G-21 did not develop during the CTBT negotiations, though informal alliances between nonaligned and western regime-builders were sometimes helpful.

As the CD's genealogy shows, the consensus rule and other procedures had their origins in the major powers' interests. They wanted to ensure structural control as

well as political dominance, and the CD's procedures reflect these objectives rather than any multilateralist ideals of sovereign equality. Additionally, the rules that allow the NGOs to observe (not participate) are the most restrictive in the entire UN system. The formal system of groups in the CD no longer represents relevant political and security interests sufficiently to operate as an efficient mechanism for managing decisionmaking. For any given arms control issue on the CD's agenda, group affiliation provides only a superficial and misleading indication of particular states' interests and postures. Despite these deficiencies, there is great resistance to change, as evidenced from the diplomatic outcry that greeted the 1999 Tokyo Forum's recommendation that the CD should "revise its procedures, update its work programme and carry out purposeful work, or suspend its operations".⁷⁵

Multilateral Negotiations as a Process of Regime Formation

Early theorists of multilateralism drew a distinction between multilateral institutions, such as the CD, and the institution of multilateralism. Though the institution of multilateralism may manifest itself as concrete organisations, it is – in language straight out of regime theory – "grounded in and appeals to the less formal, less codified habits, practices, ideas, and norms of international society".⁷⁶ Expanding a little on Ruggie, multilateralism may be conceptualised as: i) an organising principle, architecture or conceptual framework; ii) an organisation or institution; or iii) an activity or process. In focusing on the dynamics of the CTBT negotiations, this thesis is most interested in multilateralism as a process for drawing states with different interests together in a norm-based regime.

Multilateral negotiations may be conducted for single issues or specific agreements. Regimes, however, are more likely to be developed around issue-areas.⁷⁷ Two questions arise: first, what is the relationship between a treaty and a regime; and second, can there be single-issue regimes? It might be said that the multilateral negotiations constituted a mechanism for forming and formalising a 'test ban regime'. The treaty negotiations were thus a means of institutionalising the norms and principles banning nuclear testing, codifying the imperative, regulatory and constraining rules for such a regime, and establishing, where necessary, reciprocal confidence-building and verification arrangements. Such a view appears consistent with Krasner's definition, but it also risks turning every treaty into a regime.

Consider the nuclear nonproliferation regime, a term sometimes used as if it were interchangeable with the Non-Proliferation Treaty. The NPT underpins the regime, but the process of regime formation started earlier, and has continued to draw in elements not contained in the treaty itself, such as voluntary arrangements among nuclear suppliers to control the export of sensitive materials and technologies.⁷⁸ A single treaty⁷⁹ or agreement can help found and promote regime formation, but should not be assumed to constitute the regime. Indeed, one of the original claims of regime theory was that regimes embedded patterns of cooperative behaviour that were broader than either a particular international organisation or formal legal rules and requirements.⁸⁰ The NPT, once it entered into force, reinforced the principles, norms and requirements that underpinned it, thereby formalising the establishment of a wider nonproliferation regime that drew in more states over time. The NPT enshrined the concept of further disarmament measures, including the CTBT, and provided for multilateral review meetings among states parties. As the nonproliferation regime grew stronger and more comprehensive, it helped to create national and international confidence for further multilateral arms control negotiations. This affected not only nuclear weapons, but came to be extended to chemical and biological weapons, as the concept of a nonproliferation regime was widened to incorporate the nonproliferation of all weapons of mass destruction (WMD).⁸¹

Rather than the founding instrument for its own test ban regime, is it better to consider the CTBT as one among several measures for reinforcing the nonproliferation regime? Certainly, the CTBT is associated with “strengthening the regime”.⁸² The problem with this formulation is that a central feature in the CTBT negotiations was the tension between two rather different, politically significant views about the role and purpose of the CTBT for national and international security. The expectations and negotiating postures of many states were profoundly influenced by whether they viewed the CTBT as a stand-alone, single issue treaty founding its own test ban regime, as a component of the existing nonproliferation regime, or as a step towards a desired disarmament regime. As the statements of India and some of the NWS showed, how disarmament related to nonproliferation and whether it was regarded as already inherent in the established nonproliferation regime or something separate requiring a distinct approach, were deeply contested questions with critical

impact on the CTBT negotiations.⁸³ Accordingly, the problem of whether there can be single issue regimes comes down to political context, not definition.

Bargaining Power and Convergence Strategies and Tactics

In one of the few comparative studies on multilateral negotiations to include arms control, Fen Hampson identified a number of relevant factors, noting similarities and differences among the case studies. These were: crises, defined as “sudden events or situations that threaten core values and beliefs of decisionmakers”; the effectiveness or absence of “entrepreneurial leadership”; the identification of “focal points and simple solutions”; “issue decomposition and sequencing” (the process of unpacking a complex objective into simpler components or incremental steps); and compliance and verification mechanisms. Hampson also argued that in multilateralism it was essential to reduce uncertainty and complexity and to simplify the negotiating process by means of cross-cutting or bridging coalitions.⁸⁴ Some of these variables relate to the macro negotiating context, comparable to Krasner’s factors for regime formation, while others address negotiating strategies, tactics or even tools. This chapter opened by considering types of convergence, and before we can move on to look at the test ban case in detail, it is necessary to consider bargaining power and negotiating ‘skills’, strategies and tactics.

Power in shaping outcomes

Power can be conceptualised in several ways: as attributive, ‘absolute’ power, deriving from military and economic capabilities⁸⁵; as systemic or relational power, where what matters is the distributive pattern of military and economic power in the system⁸⁶; as charismatic power, associated with leadership and individual personality; or as issue-based, bargaining power. The relationship between attributive power and nuclear interests is not as simple as the congruity of the P-5 with the NWS might suggest. Nuclear weapons in the cold war were developed to demonstrate and consolidate military power and political status, but in the post cold war era, countries are as likely to seek nuclear weapons to compensate for inadequate military power and political interests; by similar reasoning, declining military and economic powers such as Britain, France and Russia, cling onto nuclear weapons in part because being a nuclear power ensures that they continue to be treated as major powers.

In focusing on how states with different interests reach convergence, it is the role of issue-based, bargaining power in shaping outcomes that interests us most. Attributive power and relational power may be components in the construction of issue-based power, but when considering negotiations it is important to maintain conceptual distinctions. Issue-based power is generally associated with controlling outcomes. According to Keohane and Nye, this is “the ability of an actor to get others to do something they otherwise would not do (and at an acceptable cost to the actor)”,⁸⁷ while Barry Buzan means much the same thing when he writes of “control power”.⁸⁸ These two definitions are about power used to influence other actors. A third relates power to ability to affect the structure of the interaction, what Krasner identifies as the capacity to effect changes in the payoff matrix.⁸⁹ Similarly, Buzan refers to “interaction capacity”, which he defined as having systemic importance as an “absolute quality of technological and societal capabilities across the system”.⁹⁰ When negotiators are described as having ‘bargaining power’, often what is meant is that they are successful in deploying their resources and capabilities, either to change other actors’ perceptions of what constitute acceptable gains or losses or to change the zone of possible agreements to integrate preferred options that had not previously been included as possibilities. Similarly, states with poor technological and diplomatic resources and capabilities (which is frequently but not always associated with having low attributive power) could be said to have low interactive capacity, contributing to low issue-based power and marginalisation. By focussing on what actors *do*, rather than on what they *are* or *have*, these concepts force us to look at the dynamics in different ways, and are especially useful for understanding how actors with less attributive power, such as middle powers or civil society, are able to punch above their weight in influencing convergence outcomes,

Convergence Strategies and Tactics

This final section relates some convergence strategies with common tactics used by state and nonstate actors. The list draws on Johan Kaufmann’s analysis of multilateralism in the North-South context,⁹¹ but Kaufmann’s observations on obstructive tactics have been greatly expanded and refined as a result of my observation of the CTBT negotiations. In particular, since the thesis seeks to explain how states with different expectations and interests were brought into convergence, it is important to go beyond Kaufmann’s observations on obstructive

tactics to prevent, disrupt and delay negotiations, and recognise also the ways in which tactics can be employed to control, shape and facilitate agreement. Convergence strategies and tactics may be employed by parties with direct interests in bargaining with other directly interested parties, or by third parties or civil society, whose interests may be personal (such as enhancing status) or political (as in regime-building or strengthening security through cooperation).

Negotiating tactics are related to strategies and can be grouped accordingly. On the side of obstruction, are strategies of delay, defection and concealment, such as “quicksand”, as tried by China over scope and verification, when its representatives repeatedly demanded debates and expert studies on definitions and technologies. Another example is “slipstreaming”, employed by Israel, with respect to the United States, and Pakistan behind China. Two commonly-used defection tactics are “moving the goalposts” (shifting from achievable to unrealisable benefits) and “best versus good”, a version of moving the goalposts employed by China and India, both of whom insisted on linkages inappropriate for this context, such as ‘peaceful uses’ or ‘timetable for disarmament’, that provoked suspicion that their real objective was to be able to justify defection without losing too much face. As discussed in Chapters 6 and 8 and the conclusion, while China deployed a number of best-versus-good demands early on, it dropped them when it decided not to defect from the treaty; by contrast, India only put forward its best-versus-good demands in the final year, but relied on them until the end, when it defected.

Linkage is a two-edged sword that may be used positively or negatively. An example of the latter is the coercive “hostage-taking” tactic seen when Russia, China or the United States pronounced a particular issue a “treaty-breaker”. Linkage can also contribute towards distributive convergence, for example through concession trading⁹², which has been included among the bridging strategies of mediation, third-party bridging and bridge building. Cognitive strategies are associated with integrative convergence and often initiated by civil society. Knowledge and norms may be shaped and diffused to reframe an issue, and change the payoff structure and zone of possible agreement. Other cognitive tactics include “stepladder”, where new information helps negotiators surmount a problem, and “unpacking”, in which complex issues are disaggregated, similar to what Hampson called “issue

decomposition and sequencing”⁹³ It should be noted that different tactics are often employed at the same time, and that the boundaries between constructive and obstructive tactics are not clear cut, and can depend on the interests and preferences of both the user and the perceiver. The following list, which concludes Chapter 2, is intended to be illustrative, not exhaustive.

Delaying tactics:

- Waiting for Godot – insist on waiting interminably for the time to become ripe
- Quicksand – bog the proposal down in questions, objections or the search for definitions, or demand an inquiry or further expert consultations.
- Ping-Pong – have the initiative referred to another forum and, if possible, shunt it back and forth between competing bodies for as long as possible.

Concealment

- Hide and Seek – conceal real objectives in high-minded rhetoric or a mass of technical data and extraneous detail.
- Slipstreaming – conceal your own preferences and coast behind another delegation, allowing it to take the flack and responsibility.
- Fronting – a form of collaborative slipstreaming, in which one delegation adopts a position that is stronger than its own interests would require, enabling others to benefit by coasting in its wake.
- Two-Faced – pretend to support a proposal that you actually oppose; this may also involve manipulating (or just allowing) another country to oppose openly and be left carrying the responsibility and stigma.⁹⁴

Defection tactics

- Moving the Goalposts – whatever is achievable becomes by definition inadequate: the objective or required standards are moved further away to ensure that agreement is rendered more inaccessible.
- Best versus Good – rejection of adequate or useful agreements on the grounds that they do not match up with some grander but less accessible ideal.

Linkage

- Linkage – tie progress or agreement on one issue with achievement of agreement or gains on another issue (a favourite CD pastime).
- Hostage-taking – coercively present a contested point or resolution in your favour as a make or break issue for the whole negotiations – associated with claims that a particular issue is a ‘treaty breaker’.

Bridging and Trading

Concession-trading – a process of trade-off and bargaining with issues that may be directly connected or, in substance terms, unrelated, with players making concessions to win favourable compromises from others.

Mediation – when a third party or parties help to facilitate agreement by enabling antagonists to address underlying causes of disagreement.

Third party bridging – in which a third party or middle powers facilitate agreement by exploring solutions midway between the extremes and identifying and fostering concessions that bring antagonistic parties closer together.

Bridge-building – in which one or more of the antagonistic parties are prepared to concede or modify demands to promote convergence.

Cognitive tactics

Norm-shaping – often associated with the strategies of civil society rather than states, in which the problem is stigmatised and the pay-off matrix itself is changed or redefined.⁹⁵

Reframing – in which the problem is recast in more positive, less adversarial terms, offering an integrative solution with mutual gains.⁹⁶

Step-ladder – deployment of new, often technical, information to enable parties to surmount obstacles (or to perceive them from a different vantage point).⁹⁷

Unpacking – in which a problem is disaggregated or separated into its constituent parts to facilitate incremental agreement or progress.

In multilateral organisations such as the CD, consensus or the use of linkage or other obstructive tactics can result in long periods of stalemate. If an important issue becomes deadlocked, states can – in extreme circumstances – choose to perform a

high risk 'bypass operation', as Australia did in taking the CTBT text to the UN General Assembly in September 1996.

Notes

¹ John D. Holum, Director of the US Arms Control and Disarmament Agency, Statement to the CD plenary, January 25, 1994, CD/PV.666.

² Stephen D. Krasner (ed) *International Regimes*, (Ithaca NY and London: Cornell University Press, 1983), p 2.

³ On alternatives to accepting agreement and no-agreement dilemmas, see James K. Sebenius, "Challenging conventional explanations of international cooperation: negotiation analysis and the case of epistemic communities" in Peter M. Haas, *Knowledge, Power, and International Policy Coordination*, (Columbia SC: University of South Carolina Press, 1992), pp 334-335.

⁴ For an institutionalist critique of game theory applications to multilateralism, see Lisa L. Martin, "The Rational State Choice of Multilateralism" in John Gerard Ruggie, "Multilateralism: the Anatomy of an Institution" in Ruggie (ed.), *Multilateralism Matters*, (New York: Columbia University Press, 1993), pp 91-117.

⁵ Prisoners' Dilemma, played as a bilateral scenario, has been described in different ways. Essentially, two prisoners guilty of conducting a joint crime are faced with the following dilemma: if both refuse to confess, they will each be sentenced for a lesser infraction and serve one year in prison; if one confesses (and implicates the other), while the other does not, the confessor will receive a lighter plea-bargained sentence of 3 months, while the refuser gets convicted and given a much heavier 10 year sentence. If both confess, they each receive a five year sentence for the crime. After being given these options, the prisoners are kept separately in solitary confinement for a night. While both would mutually benefit most from cooperating in keeping silent, each would stand to lose a very great deal if she kept silent while the other confessed. In classic Prisoner's dilemma, each prisoner decides that confession (defection) is in her interests regardless of what her partner does, even though that means a likely sentence of five years instead of only one if they both kept silent (cooperation). If the partner confesses, her own confession at least saves her from the punitive ten year sentence; and if the partner refuses to confess, she gets away with the 3 month plea bargain. Prisoner's dilemma takes place in a context where the relationship entails both partnership and conflictual distrust, and the key is having to second-guess the other's calculation of self-interest (lack of prior coordination). In Rousseau's fable of the stag hunt, a band of hunters can all feed themselves and their families if they bring down a stag, but if at the crucial moment one of the hunters leaves his place to capture a hare, he satisfies his own short term hunger, but the longer term and larger "collective good" of the stag is lost. (from Jean-Jacques Rousseau, part two, *Second Discourse: On the Origin and Foundations of Inequality Among Men*). In this case, the group has agreed in advance (coordinated) to a cooperation scenario that requires each to participate. The mutual benefit is food for all, but there is no certainty of collective success. Collective failure means hunger for all. Defection by one assures collective failure but provides at least a one-meal benefit for the defector.

⁶ Sebenius, pp 326-332.

⁷ This occurred in the landmines case in what came to be called the 'Ottawa Process'. After some years of deadlock in the CCW, where states were deadlocked over partial measures, and being marginalised in the CD, which was busy negotiating the CTBT, a number of states established an alternative negotiating forum independent of both the CCW and the CD, at which they negotiated and agreed a total ban on landmines.

⁸ See, for example, Duncan Luce, Howard Raiffa and Thomas C. Schelling, *Games and Decisions*, (New York: Wiley, 1957). On integrative bargaining and mixed motive games, see Thomas C. Schelling, *The Strategy of Conflict* (Cambridge MA: Harvard University Press, 1980/first published in 1960). For alternative approaches to mixed motive interactions, see in Kenneth A. Oye (ed.), *Cooperation Under Anarchy* (Princeton, NJ: Princeton University Press, 1986), especially Oye, "Explaining Cooperation Under Anarchy", pp 1-22; Robert Axelrod, *The Evolution of Cooperation*,

(London: Penguin Books, 1990/first published 1984); Glenn H. Snyder and Paul Diesing, *Conflict Among Nations: Bargaining, Decision Making and System Structure in International Crises* (Princeton, NJ: Princeton University Press, 1977).

⁹ Sebenius credits Walton and McKersie with coining the term 'integrative bargaining' in Richard Walton and Robert McKersie, *A Behavioral Theory of Labour Negotiations*, (New York: McGraw-Hill, 1965). See Sebenius, p 329.

¹⁰ Sebenius, pp 346-365.

¹¹ Harold Saunders, "Unofficials and Citizens in International Relationships" in Vamik D. Volkan, Joseph V. Montville and Demetrios A. Julius, (eds.) *The Psychodynamics of International Relationships*, (Lexington MA: Lexington Books, 1991) pp 1-16 and 41-70 (quote, p 41).

¹² For contrasting discussions and genealogies of the concept and usage of civil society, see John Keane (ed.), *Civil Society and the State* (London: Verso, 1988); Ellen Meiksins Wood, "The Uses and Abuses of 'Civil Society'", in Ralph Miliband, L. Panitch, and John Savile (eds.), *The Socialist Register 1990* (London: Merlin Press, 1990); Krishnan Kumar, "Civil Society: an inquiry into the usefulness of an historical term", *The British Journal of Sociology*, 44:3 (September 1993); and Mustapha Kamal Pasha and David L. Blaney, "Elusive Paradise: The Promise and Peril of Global Civil Society" *Alternatives*, 23 (1998) pp 417-450.

¹³ Both Marxists and rightist philosophers object to the emancipatory associations accorded civil society in many modern discussions. See Ellen Meiksins Wood, "The Uses and Abuses of 'Civil Society'", in Ralph Miliband, L. Panitch, and John Savile (eds.), *The Socialist Register 1990* (London: Merlin Press, 1990), (quotation on p 63). Arguing from a Marxist perspective, Wood is critical of how references to civil society have grown and portrays the concept as "an all-purpose catchword for the left, embracing a wide range of emancipatory aspirations" (p 60). She argues that by advancing a notion of new social movements that emphasise diversity and pluralism and purport to democratise state decision-making and relations among states, proponents of civil society are not opposing the state system so much as blunting its contradictions and colluding in the capitalist enterprise.

¹⁴ Helmut Anheier, Marlies Glasius and Mary Kaldor (eds.), *Global Civil Society 2001* (Oxford: Oxford University Press, 2001), p 4.

¹⁵ M. J. Peterson, "Transnational Activity, International Society and World Politics", *Millennium*, (1992)

¹⁶ Ann M. Florini (ed.), *The Third Force: The Rise of Transnational Civil Society*, (Tokyo: Japan Center for International Exchange and Washington D.C.: Carnegie Endowment for International Peace, 2000), p 7.

¹⁷ See, for example, the contributions in UNIDIR's publications, particularly the issue devoted to NGOs, *Disarmament Forum 4* (Geneva: United Nations Institute for Disarmament Research, 1999).

¹⁸ See Amy E. Smithson, *Separating Fact from Fiction: The Australia Group and the Chemical Weapons Convention*, Occasional Paper 34, (Washington DC: The Henry L. Stimson Center, March 1997).

¹⁹ Such terms frequently depend on political perspective for their meaning and attributes.

²⁰ Mustapha Kamal Pasha and David L. Blaney, "Elusive Paradise: The Promise and Peril of Global Civil Society" in *Alternatives*, 23 (1998) pp 420.

²¹ As noted above, this claim of an inherently normative role is made in Anheier, Glasius and Kaldor, but contested by others.

²² On one example of this, the role of the US Campaign for the NPT in furthering the Clinton administration objective of indefinite extension of the NPT, see Rebecca Johnson, "Advocates and Activists: Conflicting Approaches on Nonproliferation and the Test Ban Treaty", in Florini, 2000, pp 49-82. See also Keith Krause's discussion of the 2001 Small Arms Conference, and the role of the US National Rifle Association and other groups from the US firearms lobby in influencing the US position and disrupting the formation of common NGO positions. Keith Krause, "Multilateral Diplomacy, Norm Building, and UN Conferences: the Case of Small Arms and Light Weapons", in *Global Governance* 8:2 (2002) p 258.

²³ Florini, 2000, p 3.

²⁴ Peter M. Haas, "Introduction" in Haas, 1992, p 3.

²⁵ Emanuel Adler, "The emergence of cooperation: national epistemic communities and the international evolution of the idea of nuclear arms control", in Haas, 1992, p 112.

²⁶ See also the case studies on the role of epistemic communities in influencing negotiations on issues relating to trade, finance, food-aid, endangered species and the environment, in Haas, 1992.

²⁷ Ethan A Nadelmann, "Global prohibition regimes: the evolution of norms in international society", *International Organization* 44:4 (Autumn 1990), pp 479-526, quote from p 482.

²⁸ Ibid., especially pp 484-485 and pp 524-525.

²⁹ Richard Price, "Reversing the Gun Sights: Transnational Civil Society Targets Landmines", *International Organization* 53:3 (1998) pp 613-644, quote from p 613.

³⁰ Ibid., p 620.

³¹ Ibid.

³² Krause, 2002, p 256.

³³ Ibid.

³⁴ F. Yamin, "NGOs and International Environmental Law: A Critical Evaluation of their Roles and Responsibilities", *Review of European Community and International Environmental Law*, 10:2 (2001), p 149.

³⁵ Two of the constitutive principles of the United Nations is that membership is open to all "peace-loving states" and that the organisation is based on the "principle of the sovereign equality of all its members". Articles 2 and 4, *Charter of the United Nations* (New York: UN Department of Public Information, 1995 Reprint).

³⁶ See Peter Willetts, "Transnational actors and international organisations in global politics", in John Baylis and Steve Smith, *The Globalization of World Politics*, second edition (Oxford: Oxford University Press, 2001), pp 357-362. Willetts advocates abandoning the language of 'states' and 'nonstate' actors to admit the possibility of theorising about many different types of actors in global politics. While accepting his underlying argument about the significance of different actors, the use of terms like 'states' need not prevent such theorising, provided that the way in which they are used is explained critically.

³⁷ Paul Taylor, "The United Nations and international order" in Baylis and Smith, 2001, p 338; Charles Beitz, *Political Theory and International Relations* (Princeton NJ: Princeton University Press, 1979); Terry Nardin, *Law, Morality and the Relations of States*, (Princeton NJ: Princeton University Press, 1983; and Michael Walzer, *Just and Unjust Wars: A Moral Argument with Historical Illustration*, (New York NY: Basic Books, 1977).

³⁸ Andrew Moravcsik, "Taking Preferences Seriously: A Liberal Theory of International Politics" in Paul R. Viotti and Mark V. Kauppi, *International Relations Theory*, Third Edition, (Boston: Allyn and Bacon, 1987) p 250.

³⁹ An early, groundbreaking analysis highlighting the challenges to notions of rationality in foreign policy decision-making was Graham T. Allison, *Essence of Decision: Explaining the Cuban Missile Crisis*, (Boston MA: Little, Brown & Co. 1971). For an updated analysis, see also Graham T. Allison with Philip Zelikow, *Essence of Decision: Explaining the Cuban Missile Crisis*, Second Edition, (New York: Longman, 1999). Also: Morton H. Halperin, *Bureaucratic Politics and Foreign Policy*, (Washington D.C.: Brookings Institution, 1974); Richard Neustadt, *Presidential Power: The Politics of Leadership* (London: John Wiley and Sons, 1960); John Steinbruner, *The Cybernetic Theory of Decision* (Princeton NJ, Princeton University Press, 1974); Frances E. Rourke, *Bureaucratic Power in National Policy Making* (Boston MA: Little, Brown, 1986); Charles W. Kegley, Jr. and Eugene R. Wittkopf, *American Foreign Policy: Pattern and Process*, Fourth edition, (New York NY: St. Martin's Press, 1991); Amy Sands, "The Impact of Governmental Context on Negotiation and Implementation: Constraints and Opportunities for Change" in Nancy W. Gallagher (ed), *Arms Control: New Approaches to Theory and Policy*, (London: Frank Cass, 1998). See also the articles in James N. Rosenau (ed), *Domestic Sources of Foreign Policy*, (New York NY: The Free Press, 1967).

⁴⁰ While many analysts have recognised that decisionmakers must be concerned simultaneously with domestic and international pressures, Robert Putnam's early theorising about the domestic/international dynamic, which he characterised as a two-level game, was particularly influential. Robert D. Putnam, "Diplomacy and domestic politics: the logic of two-level games", *International Organization* 42:3 (1988) pp 427-460. See also the essays in Peter B. Evans, Harold K. Jacobson, and Robert D. Putnam, *Double Edged Diplomacy: International Bargaining and Domestic Politics* (Berkeley CA: University of California Press, 1993). For an alternative theory, considered in Chapter 9, see Jeffrey W. Knopf, "Beyond two-level games: domestic-international interaction in the intermediate-range nuclear forces negotiation", *International Organization* 47:4 (1993) pp 599-628. For general discussions of diplomatic practice and the pressures on diplomats, see G.R. Berridge, *Diplomacy: Theory and Practice* (Hemel Hempstead: Prentice Hall/Harvester Wheatsheaf, 1995); and R.P. Barston, *Modern Diplomacy*, second edition (Harlow: Addison Wesley Longman, 1997).

⁴¹ This presented a range of targets that could more easily be persuaded to take action, which then helped to give momentum to efforts at controlling or banning the weapons. For some states, and often as a result of pressure from transnational civil society, the unilateral, voluntary renunciation of the export or production of landmines signalled their commitment to negotiate the ban. For example, the

Italian car manufacturer, Fiat, disposed of its landmines production subsidiary soon after being told of discussions on organising an international boycott of Fiat at the Second NGO Conference on Landmines, (Geneva, May 9-11, 1994), in which the author participated. For accounts of the role of civil society and states in achieving the 1997 Mine Ban Treaty, see Maxwell A. Cameron, Robert J. Lawson and Brian W. Tomlin, (eds.) *To Walk Without Fear: The Global Movement to Ban Landmines*, (Toronto: Oxford University Press, 1998); and Kenneth Anderson, "The Ottawa Convention Banning Landmines, the Role of International Non-Governmental Organizations and the Idea of International Civil Society." *European Journal of International Affairs*. Vol. II, No. 1, 2000; and Motoko Mekata, "Building Partnerships towards a Common Goal: Experiences of the International Campaign to Ban Landmines" in Ann M. Florini (ed.), *The Third Force: The Rise of Transnational Civil Society*, (Tokyo: Japan Center for International Exchange and Washington D.C. Carnegie Endowment for International Peace, 2000) pp 143-176.

⁴² Earlier laws, such as the Geneva Protocol, prohibited use but not possession.

⁴³ See, for example, preambular paragraph 9 from the 1999 UNGA resolution "Towards a Nuclear Weapon Free World: the Need for a New Agenda", UN/res/54/54G (December 1, 1999) which referred to developing the START process into a "plurilateral mechanism including all the nuclear weapon states, for the practical dismantling and destruction of nuclear armaments..." It should be noted that though gaining currency in arms control diplomacy, the use of the term 'plurilateral' is not yet standardised and 'multilateral' is still used in some circles to cover negotiations that would fit the criteria of plurilateral, as defined here. As yet, the concept does not appear to have been institutionalised as "plurilateralism". In this thesis 'plurilateral' is used as an adjective denoting a particular type of negotiations among more than three states with shared direct interests, although they may have asymmetric capabilities.

⁴⁴ See Miles Kahler, "Multilateralism with Small and Large Numbers" in Ruggie, 1993, pp 295-326.

⁴⁵ The Security Council was established before most of its permanent members developed nuclear weapons and there is no conditional relationship between nuclear weapon possession and the Security Council – one does not necessarily entail the other. The relevance of the nuclear debate in India is discussed in Chapters 5 and 8.

⁴⁶ The NWS also at times appear equivocal about the relationship. At the 2000 NPT Review Conference, for example, some UK diplomats advocated use of the designation "N-5" to denote the five governments acting in their capacity as declared nuclear weapon states, and "P-5" when connoting a wider role associated with their positions on the Security Council. Attractive though the demarcation initially appeared, it was based on the questionable assumption that the two roles could be separated in perception and politics. The key question is whether the five states' roles and actions as NWS can be clearly distinguished from their roles and actions as members of the Security Council. This was not the case in the CTBT and NPT negotiations. The P-5 held private meetings at which they sought to come to their own agreements on contentious issues in the CTBT, such as scope and verification. The CTBT took up most of the meetings, but other aspects of the P-5 security relationship were also discussed. The P-5's own confusions about where the roles merge or overlap were very clearly illustrated after India and Pakistan each conducted nuclear tests in May 1998. At a special meeting of P-5 Foreign Ministers in Geneva on June 4, US Secretary of State Madeleine Albright told the press that "as the NPT nuclear weapon states we have a responsibility to protect the nonproliferation regime". See Madeleine K. Albright, US Secretary of State for Defence, *Statement to the press*, Geneva, June 4, 1998. The P-5 Communiqué declared "Notwithstanding their recent nuclear tests, India and Pakistan do not have the status of nuclear weapon States in accordance with the NPT" and exhorted the two states to adhere to the CTBT, not to weaponise or deploy nuclear weapons or missiles and to confirm their policies not to contribute to proliferation by exporting equipment, materials or technology. *Joint Communiqué on India and Pakistan nuclear tests by the five Permanent Members of the UN Security Council*, Geneva, June 4, 1998.

⁴⁷ For a useful discussion of nuclear ambiguity and nuclear opacity, see Avner Cohen, *Israel and the Bomb* (New York: Columbia University Press, 1998), especially pp 1-7. Cohen characterised 'nuclear ambiguity' as uncertainty or lack of clarity as to the degree of advancement of a particular nuclear programme. He coined the term 'nuclear opacity' to describe Israel's refusal to acknowledge formally that it possesses nuclear weapons. Cohen defined nuclear opacity as "a situation in which a state's nuclear capability has not been acknowledged, but is recognised in a way that influences other nations' perceptions and actions".

⁴⁸ See for example, Prime Minister Atal Bihari Vajpayee's declaration two weeks after India conducted its nuclear tests in 1998: "India is now a nuclear weapon state. This is a reality that cannot be denied. It is not a conferment that we seek; nor is it a status for others to grant. It is an endowment to the nation

by our scientists and engineers. It is India's due, the right of one-sixth of humankind." Atal Bihari Vajpayee, Prime Minister of India, *Suo Moto* statement to Parliament, May 27, 1998, <http://www.indiagov.org>, reproduced in *Disarmament Diplomacy* No. 26, (May 1998), pp 4-5.

⁴⁹ Hedrick Smith, "U.S. Assumes the Israelis Have A-Bomb or Its Parts", *New York Times*, July 18, 1970, referred to in Avner Cohen, 1998, p 1, note 2. Cohen identified Israel as the sixth nation to acquire nuclear weapons. By 1993, Israel was reported to possess the world's fifth largest nuclear arsenal, with estimates ranging from 50 to over 200 nuclear warheads and sophisticated means of delivery. See also Shai Feldman, *Nuclear Weapons and Arms Control in the Middle East*, (Cambridge MA/London: The MIT Press, 1997); and Seymour M. Hersh, *The Samson Option: Israel's Nuclear Arsenal and American Foreign Policy*, (New York: Random House, 1991).

⁵⁰ There is a massive literature on proliferation and nuclear capabilities. For general coverage, see, for example, the range of IAEA publications; Rodney W. Jones and Mark G. McDonough, *Tracking Nuclear Proliferation* (Washington DC: Carnegie Endowment for International Peace, 1998); David Fischer, *Stopping the Spread of Nuclear Weapons* (London and New York: Routledge, 1992); David Albright, Frans Berkhout and William Walker, *World Inventory of Plutonium and Highly Enriched Uranium 1992* (Oxford: Oxford University Press, 1993); David Albright, Frans Berkhout and William Walker, *Plutonium and Highly Enriched Uranium 1996: World Inventories, Capabilities and Policies* (Oxford: Oxford University Press, 1997); Regina Cowen Karp (ed.) *Security with Nuclear Weapons?* (Oxford: Oxford University Press, 1991); Ted Greenword, Harold Feiveson, and Theodore Taylor, *Nuclear Proliferation: Motivations, Capabilities and Strategies for Control* (New York: McGraw Hill, 1977; Jozef Goldblat, *Nonproliferation: The Why and Wherefore*, (Philadelphia PA: Taylor and Francis, 1985).

⁵¹ Iraq's extensive nuclear programme was uncovered by the IAEA and the UN Special Commission on Iraq (UNSCOM) after Saddam Hussein's 1990 invasion of Kuwait and the ensuing Gulf War of 1991. The Democratic People's Republic of Korea (DPRK) failed to meet inspections requirements by the IAEA, as mandated in its safeguards agreements in accordance with the NPT, and was consequently called on to prove that it had not diverted plutonium from its civilian nuclear programme for weapons purposes, which it has failed to do. Whether Iran, the third member of President Bush's "axis of evil" belongs in this category is more problematic. During the CTBT negotiations, "rogue states" was the US' preferred term of opprobrium. It was criticised by many as demonising the states in question rather than engaging with them. As relations with Iran began to normalise, and following initial successes in the 'sunshine policy' of South Korean Kim Dae Jung towards the DPRK, Clinton policymakers began referring to "states of concern", but George Bush has returned to describing them as rogue states. In his State of the Union speech on January 28, 2002, George W. Bush rebranded the three states the "Axis of Evil". There is not room here to do more than offer a note of caution about the way in which proliferation concerns may be manipulated to serve domestic and national political agendas.

⁵² Albright, Berkhout and Walker, 1997, p 352. During the period of writing, 2000-2003, more evidence has emerged to confirm these suspicions. See successive issues of *Disarmament Diplomacy*, available on www.acronym.org.uk.

⁵³ Argentina and Brazil turned away from nuclear weapons during the 1980s and joined the NPT in 1995 and 1998 respectively. South Africa dismantled its nuclear bombs and facilities and joined the NPT in 1991, just prior to the African National Congress assuming power. Algeria and Taiwan are included by some analysts among states of proliferation concern, although they are not currently believed to have active programmes. Germany, Japan and the Republic of Korea, which have publicly ruled out the nuclear weapon option, have geared their civilian nuclear programmes in ways that would enable them to reverse that commitment relatively quickly. See Albright, Berkhout and Walker, 1997, especially pp 282-368. See also David Fischer, *Stopping the Spread of Nuclear Weapons* (London and New York: Routledge, 1992); and David Albright, "South Africa and the Affordable Bomb", *The Bulletin of the Atomic Scientists*, (July/August 1994) pp 37-47.

⁵⁴ When the Soviet Union disintegrated, four nuclear weapon possessors could have emerged. Belarus, Kazakhstan and Ukraine were persuaded to hand their nuclear weapons and delivery systems to Russia and join the NPT as NNWS. Kazakhstan ensured the closure of the Semipalatinsk nuclear test site. Russia, as the dominant member of the Soviet Union, was allowed to inherit the USSR's treaty obligations (and NWS status under the NPT). Rodney W. Jones and Mark G. McDonough, *Tracking Nuclear Proliferation* (Washington DC: Carnegie Endowment for International Peace, 1998), pp 25-48 and 71-100.

⁵⁵ While EU middle powers Ireland and Sweden were members of the New Agenda Coalition, Japan and NATO members Canada and Norway, declined. By contrast, in the case of anti-personnel

landmines, a non-nuclear security issue, Canada, Norway and other NATO states took leading roles in the Ottawa Process, despite US opposition. See Rebecca Johnson, "First Committee Report," *Disarmament Diplomacy* 32 (November 1998); Nicola Butler, "NATO in 1999: A Concept in Search of a Strategy", *Disarmament Diplomacy* 35 (March 1999); Matthias Dembinski, Alexander Kelle and Harald Müller, "Nato and Nonproliferation: A Critical Appraisal", *PRIF Reports* 33 (Frankfurt am Main: Peace Research Institute Frankfurt, April 1994); David Fischer and Harald Müller, "United Divided: The Europeans at the NPT Extension Conference," *PRIF Reports* 40 (Frankfurt am Main: Peace Research Institute Frankfurt, November 1995); Hans-Joachim Schmidt, "Nato and Arms Control: Alliance Enlargement and the CFE Treaty" *PRIF Reports* 42 (Frankfurt am Main: Peace Research Institute Frankfurt, July 1996); Harald Müller, "Nuclear Weapons and German Interests: An Attempt at Redefinition", *PRIF Reports* 55 (Frankfurt am Main: Peace Research Institute Frankfurt, August 2000); and Fen Osler Hampson, Harald von Riekhoff, and John Roper, *The Allies and Arms Control*, (Baltimore and London: The Johns Hopkins University Press, 1992). See also "Final Communiqué, Declaration of the Heads of State and Government," *Press Release M-1(94)3* (Brussels: January 11, 1994); "Final Communiqué Ministerial Meeting of the North Atlantic Council in Foreign Ministers Session," *Press Release M-NAC-2(98)140* (Brussels: December 8, 1998); "The Alliance Strategic Concept," *Press Release NAC-S(99)65* (Washington: April 24, 1999); and "An Alliance for the 21st Century", Washington Summit Communiqué, *Press Release NAC-S(99)64* (Washington: April 24, 1999).

⁵⁶ Decision on agenda item 1 "Nuclear test ban" adopted by the Conference on Disarmament at its 659th plenary meeting on 10 August 1993", CD/1212, August 10, 1993.

⁵⁷ The first of these was the 'Ten-Nation Committee on Disarmament', comprising the United States, the Soviet Union, Britain and a small balance of their Eastern European and Western allies. In 1962, the Committee was expanded to the Eighteen Nation Disarmament Committee (ENDC), incorporating eight additional representatives from countries which declared themselves neutral or nonaligned in relation to both of the cold war blocs. A significant weakness in the early years was that two further emerging nuclear weapon states, France and China, remained outside the ENDC, although France had been invited to join. The ENDC was initially instructed by the UN General Assembly, and reported back to it. In 1969, it was enlarged to include eight more members, changing its name to the Conference of the Committee on Disarmament (CCD). Five more members were added in 1975. In January 1979, in conjunction with decisions taken at UNSSOD I, the CCD was enlarged again, and constituted as the Committee on Disarmament. See Alva Myrdal, *The Game of Disarmament: How the United States and Russia Run the Arms Race*, (Manchester: Manchester University Press, 1977) pp xiii, 72. The People's Republic of China was only admitted into the United Nations in 1971, at which time it also took over China's permanent seat on the Security Council.

⁵⁸ The Hague Peace Conferences, convened in 1899 and 1907, constituted early multilateral efforts to restrict certain types of weapons (such as dum-dum bullets) and regulate the conduct and customs of warfare. Inga Thorsson, "Multilateral Forums" in Arthur S. Lall, *Multilateral Negotiation and Mediation: Instruments and Methods*, (New York: Pergamon Press/International Peace Academy, 1985), p 94. See also Jozef Goldblat, *Arms Control: A Guide to Negotiations and Agreements*, (London: Sage Publications, 1994) pp 11 and 189-190.

⁵⁹ Paragraph 28, *Final Document, Special Session of the General Assembly on Disarmament 1978* (New York NY: United Nations, May 1988 Reprint) p13. UNSSOD I was held from May 23 to July 1, 1978, and though the session ran over by a day, it adopted its Final Document by consensus, unlike in subsequent Special Sessions on Disarmament, in 1982 and 1988, which were unable to reach agreement.

⁶⁰ Paragraph 120, *Final Document, Special Session of the General Assembly on Disarmament 1978*, *Ibid.*, pp 41-43.

⁶¹ Thorsson, 1985, pp 93-114; and Goldblat, 1994, pp 8-10.

⁶² CD members during January 1994 to June 1996 of the CTBT negotiations: Britain, China, France, the Russian Federation, the United States, India, Pakistan, Argentina, Australia, Belgium, Canada, Germany, Italy, Japan, the Netherlands, Sweden, Bulgaria, Hungary, Poland, Romania, Algeria, Brazil, Cuba, Egypt, Ethiopia, Indonesia, Iran, Kenya, Mexico, Mongolia, Myanmar (Burma), Nigeria, Peru, Sri Lanka, Venezuela, Yugoslavia (denied its seat) Zaire (now Democratic Republic of Congo).

⁶³ The 23 countries were part of a list, carefully balanced by Ambassador Paul O'Sullivan of Australia, to reflect post-war regional and political realities, including highly militarised states widely regarded as problems. The decision was planned for September 1993, but failed to go through as a result of a last minute veto from the United States over admitting Iraq. Other states refused to drop Iraq from the proposed list of 23 applicant countries, on grounds that the list was the result of painstaking

negotiations to balance international and regional concerns, relevance for disarmament negotiations rather than approval being the significant criterion. It took nearly 3 years for the issue finally to be resolved, enabling the 23 countries to take up membership of the CD in June 1996. Proposed by Argentina and adopted at the 739th plenary, the CD decided “in implementation of its decision CD/1356 of 21 September 1995, to admit Austria, Bangladesh, Belarus, Cameroon, Chile, Colombia, the Democratic People’s Republic of Korea, Finland, Iraq, Israel, New Zealand, Norway, the Republic of Korea, Senegal, Slovakia, South Africa, Spain, Switzerland, Syria, Turkey, Ukraine, Viet Nam and Zimbabwe as members of the Conference on Disarmament on 17 June 1996.” CD/1406, June 17, 1996. During the negotiations, some 30–40 states participated as observers, of whom fewer than ten engaged actively in the test ban negotiations. Following a further decision on CD enlargement in August 1999, admitting five new members, Ecuador, Ireland, Kazakhstan, Malaysia and Tunisia, the membership (as of September 1, 2002) stands at 66.

⁶⁴ Rule 18, Conference on Disarmament, Rules of Procedure.

⁶⁵ It was for this reason that the United States withheld consensus from the decision to enlarge the CD in September 1993. Washington was concerned that Iraq, which was on the O’Sullivan list, would use its veto to sabotage agreements and block the work of the CD as a means of exerting leverage on the United States and others to lift the UN Security Council sanctions. To bypass the US objections while maintaining the integrity of the O’Sullivan list, South Africa crafted a device whereby all the new members signed an undertaking that for the first two years they would not individually obstruct any action of the CD: in so doing they suspended their individual right to a veto, although more than one of the new members could withhold consensus if they acted in concert. Together with Chile (leader of the so-called G-23), New Zealand, and CD member Argentina, South Africa managed to persuade the United States to accept this compromise. See Rebecca Johnson, “Geneva Update No. 29”, *Disarmament Diplomacy*, No. 6, (June 1996), pp 24-27 for a fuller account of the expansion decision.

⁶⁶ Clocks are stopped by the chair before midnight on the final day if there is sufficient hope that an agreement can be reached, as was done at the NPT Review Conference in May 2000. By contrast, in 1995, the Chair of the NPT Review and Extension Conference, Jayantha Dhanapala, having succeeded in getting a package of agreements on extending and strengthening the Treaty on the previous day, decided that there was insufficient likelihood of reaching consensus on the Final Document, and so convened the closing session just before midnight, refusing to stop the clock. Delegations caught in difficult decision making dilemmas can delay discussions by insisting that they need to consult with their capitals or that they need new instructions. With different time zones to navigate, this can be effective during the late stages of negotiations. Stopping the clock is a way of undercutting such tactics.

⁶⁷ R.P.Barston, *Modern Diplomacy*, second edition, (London: Addison Wesley Longman, 1997) p 6 and pp 87-98.

⁶⁸ The rule of consensus was demanded from the beginning by the nuclear powers, in particular the United States, which wanted to ensure that no alliance or majority of states could vote against what Washington deemed to be its interests, as happened with some frequency during the cold war, in the UN General Assembly and some of the other multilateral bodies.

⁶⁹ This is similar to a point made by Kahler with regard to consensus, in Miles Kahler, “Multilateralism with Small and Large Numbers” in Ruggie, 1993, pp 318-319.

⁷⁰ As of August 1996, when the CTBT was finalised, the division of CD members among the groups was as follows: **Group of Western States and Others:** Argentina, Australia, Austria, Belgium, Canada, Germany, Finland, France, Israel, Italy, Japan, the Netherlands, New Zealand, Norway, the Republic of Korea, Spain, Sweden, Switzerland, Turkey, UK and USA (21); **Group of Eastern European States and Others:** Belarus, Bulgaria, Hungary, Poland, Romania, Russian Federation, Slovakia, Ukraine. (8 – not counting Yugoslavia) ; **The Group of Non-Aligned States and Others** was called the G-21 when it had 21 members, and the name has remained, although the numbers have fluctuated. In August 1996, the G-21 comprised: Algeria, Bangladesh, Brazil, Cameroon, Chile, Colombia, Cuba, the Democratic People’s Republic of Korea, Egypt, Ethiopia, India, Indonesia, Iraq, Iran, Kenya, Mexico, Mongolia, Morocco, Myanmar (Burma), Nigeria, Pakistan, Peru, Senegal, South Africa, Sri Lanka, Syria, Venezuela, Viet Nam, Zaire, Zimbabwe (30). The five states added in 1999 were: Ireland (Western Group); Kazakhstan (Eastern European Group); and Ecuador, Malaysia and Tunisia (G-21). China is outside any of the groups, and often refers to itself as the ‘group of one’.

⁷¹ The G-21, for example, used to be called the Group of Non-Aligned and Neutral States, as it was a CD subset of the Movement of Non-Aligned States (NAM). The common factor among states in the Non-Aligned Movement, formalised in 1961 in Belgrade, was supposed to be a foreign policy that was independent of the superpowers or their associated blocs. Though some political coordination was

envisaged, it was not intended to form a third bloc. See Richard L. Jackson, *The Non-Aligned, the UN and the Superpowers* (New York: Praeger, 1983); and Leo Mates, *Nonalignment* (New York and Belgrade: Oceana Publications, 1972). A note on spelling: Like non-proliferation and nonproliferation, non-governmental and nongovernmental, both non-aligned and nonaligned are in common usage. In common with more recent trends, this thesis drops the hyphens, except where they are used in formal titles and publications.

⁷² Argentina and Sweden left the G-21 and joined the Western group midway in the CTBT negotiations, and Mongolia left the Eastern European group for the G-21. As more and more erstwhile members of the Eastern European Group have applied to join the EU and/or NATO, that group has ceased to have any separate political relevance. Its members are more likely to go along with EU or NATO-led positions than some of the more independent-minded full members of the Western Group. The Eastern European Group is presently loath to disband itself entirely, as it retains the right to nominate candidates for chairs and other positions. With posts still allocated equally among the Western, Eastern European and G-21 groups, the anomalous position of the Eastern European group is increasingly causing resentment among nonaligned states, particularly since the Eastern European group now has fewer than one third the members of the G-21, which has more than thirty.

⁷³ See Tariq Rauf, "PrepCom Opinion: Farewell to the NPT's Strengthened Review Process?", *Disarmament Diplomacy* No. 26, (May 1998), p 26. See also the presentations from Vladimir Petrovsky, Director-General of the United Nations Office in Geneva and the Secretary-General of the CD, and Rebecca Johnson, at a meeting convened by the UN Institute for Disarmament Research (UNIDIR) and the Canadian Government on "Breaking the CD Impasse", November 30, 2000, published in *Disarmament Diplomacy*, No. 53 (December 2000/January 2001), pp 16-23.

⁷⁴ The French-Australian conflict was not as personalised as the British hostility to Mexican ambassador Miguel Marín Bosch. France's opposition to Australia was principally linked with the Australian government's uncompromising and often outspoken opposition to French testing in the Pacific, as discussed in chapters 4, 5 and 6.

⁷⁵ Recommendation 15 "Revitalise the Conference on Disarmament", *Facing Nuclear Dangers: The Report of the Tokyo Forum for Nuclear Non-Proliferation and Disarmament*, (Tokyo: Japan Institute of International Affairs/Hiroshima Peace Institute, July 25, 1999) p 60. The Tokyo Forum was convened by the Japanese government as a successor to the 1996 Canberra Commission, but its report was less far reaching and received less attention.

⁷⁶ James A. Caporaso, "International Relations Theory and Multilateralism: The Search for Foundations", in Ruggie, 1993, p 54.

⁷⁷ See Keohane, 1984, p 61. Alternatively, Puchala and Hopkins argued that there was a continuum from specific, single-issue to diffuse, multi-issue regimes. Donald J. Puchala and Raymond F. Hopkins, "International regimes: lessons from inductive analysis" in Krasner 1983, p 64.

⁷⁸ See Harald Müller, "The Internationalisation of Principles, Norms, and Rules by Governments: The Case of Security Regimes", in Rittberger, 1993, pp 361-388; and Appendix "The International Non-Proliferation Regime" in Joseph Cirincione (ed.), *Repairing the Regime*, (New York NY: Routledge, 2000), pp 283-291.

⁷⁹ Whether or not the NPT was genuinely multilateral is itself open to question, as the treaty text was essentially a joint US-Soviet draft modified by multilateral negotiations. As discussed further in Chapter 3, the process leading to adoption of the NPT raises pertinent questions about how multilateralism operates in different political contexts and the degree to which the practice is determined by the power relations among participating (and, in some cases, excluded) states.

⁸⁰ See Andrew Hurrell, "International Society and the Study of Regimes: a Reflective Approach" in Rittberger, 1993, pp 49-72; and James A. Caporaso, "International Relations Theory and Multilateralism: The Search for Foundations", in Ruggie, 1993, pp 51-90.

⁸¹ Cirincione, 2000. The term 'weapons of mass destruction' is somewhat misleading, but has now entered mainstream use.

⁸² Ibid., especially the chapters by Jayantha Dhanapala, Bill Richardson and Appendix I on the international nonproliferation regime.

⁸³ US, French and British diplomats referred to treaties such as the CTBT, and the 'nonproliferation regime' in general, as locking in or at least constraining the options of 'proliferators', by which they meant any state outside the definition provided in article IX.3 of the NPT that might seek to acquire nuclear weapons. By contrast, the Canadians, Germans, Australians and Japanese (who also made frequent reference to regimes) appeared to infuse their regime terminology with a wider concept of common security, where individual treaties were viewed as building blocks towards a fairer

international system and progress in disarmament, security and peace. The term was less readily used by China, Russia or members of the G-21 Group of Nonaligned States.

⁸⁴ Hampson, 1995, especially introduction and conclusion.

⁸⁵ Hans J. Morgenthau, *Politics Among Nations: The Struggle for Power and Peace*, revised by Kenneth W. Thompson, brief ed., (New York: McGraw-Hill Inc, 1993, first published in 1948).

⁸⁶ Kenneth N. Waltz, *Theory of International Politics*, (New York: McGraw-Hill, 1979).

⁸⁷ Robert O. Keohane and Joseph S. Nye, *Power and Interdependence*, Third edition, (New York, NY: Longman 2001/first published 1977), p 10.

⁸⁸ Buzan identified three principal types of power, which he called attributive, relational and control. Barry Buzan, "Beyond Neorealism: Interaction Capacity", in Barry Buzan, Charles Jones, and Richard Little, *The Logic of Anarchy: Neorealism to Structural Realism* (New York: Columbia University Press, 1993), p 68.

⁸⁹ Krasner also identified two further kinds of power in negotiations, which are less relevant here: the capacity to determine who plays; and the capacity to determine the rules. Stephen D. Krasner, "Structural causes and regime consequences: regimes as intervening variables" in Krasner, 1983, pp 13-16; and "Regimes and the limits of realism: regimes as autonomous variables", in Krasner, 1983, pp 355-368.

⁹⁰ Buzan, pp 66-80.

⁹¹ Kaufmann was looking at negotiations to achieve a better international economic order and focused mainly on obstructive tactics, but his descriptions and illustrations are sufficiently generalisable as to be drawn on for understanding the dynamics of arms control negotiations, where the dichotomy between nuclear haves and have-nots has a number of similar features as the North-South dynamic. Johan Kaufmann, *The Diplomacy of International Relations: Selected Writings*, (The Hague: Kluwer Law International, 1998), especially pp 11-30.

⁹² Dean Pruitt calls this concession-trading tactic "logrolling", a term adopted by Hampson. However, shifting a logjam can sometimes be accomplished by the removal of just one strategically placed log, which is a rather different matter than trading the removal of obstructive logs in more than one place, though either method may eventually get the logs rolling. On logrolling and bridging tactics, see Dean G. Pruitt, *Negotiation Behaviour*, (New York: Academic Press, 1981), especially pp 153-155; and Hampson, 1995, pp 40-43.

⁹³ See Hampson, 1995, especially introduction and conclusion.

⁹⁴ Kaufmann gave the name "Black Peter" to this tactic, which he described as: "I do not like this proposal, but I tell people I support it, expecting that country X which is against it, will be left with the stigma of having been responsible for its rejection." This somewhat obscure reference for the non-Dutch was explained to me during a thesis interview with Dutch diplomats in 2002: Black Peter is Father Christmas's malevolent aide (and perhaps alter ego) in Dutch children's stories. See Kaufmann, 1998, p 22.

⁹⁵ A recent example of this was civil society's deliberate equating of landmines with weapons of mass destruction, as in 'weapons of mass destruction in slow motion', and their framing of the ban in absolute and moralistic terms, thereby marginalising partial options or technical fixes involving self-neutralising or self-destroying mines. See Price, op. cit., especially pp 628-631.

⁹⁶ Reframing does not require a fundamental change to the pay-off matrix as in the previous example, but relates to changing the zone of possible agreement by shaping perceptions. One effective means of reframing to facilitate agreement is to show that an interaction perceived by parties as zero sum, in which gains by one entail losses by the other(s), can be constructed as positive sum, in which absolute gains can be made by many or all, or even variable sum, in which the solution entails 'creating value', in contradistinction to a win-lose outcome. See Sebenius, p 335.

⁹⁷ Epistemic actors or norm entrepreneurs can provide step-ladder information either on their own behalf or on behalf of governments.

Chapter Three

Cold War Arms Control: the Thwarted Test Ban

Following the detonations at Hiroshima and Nagasaki, arms control developed, as the Baruch Plan succinctly stated “*to make a choice between the quick and the dead.*”¹ This chapter provides an essential historical background, with consideration of the relationship between efforts to achieve a nuclear test ban treaty and the development of cold war arms control between 1954 – when India’s prime minister, Jawaharlal Nehru, and the Japanese Parliament made separate calls for a nuclear test ban – and 1989, when the Berlin Wall was brought down. In addition to addressing the political context, dominated by the US-Soviet nuclear arms race, I consider the political impact of civil society’s interactive role in informing and amplifying fluctuations in public concern about nuclear weapons, testing and peace.

The devastation and horrors of World War II prompted a renewal of interest in multilateralism as a mechanism for building collective security, resulting in the establishment of the United Nations and its various associated institutions and, on a regional basis, institutions such as the European Economic Community (now the European Union).² Nuclear weapons developed a public visibility not generally accorded other weapons³, largely as a consequence of the dramatic devastation of the Japanese cities of Hiroshima and Nagasaki in 1945.

Between the early calls for a CTBT in 1954 through to the opening of multilateral CTBT negotiations in Geneva in 1994, four phases may be identified:

- **Settling for the Partial Test Ban Treaty**, from the mid 1950s to 1963, when the United States, Soviet Union and Britain abandoned the search for a comprehensive test ban treaty, but agreed to ban testing in the atmosphere, underwater and outer space, leaving underground testing unregulated. During this period the first anti-nuclear movements were born, involving professional experts (mainly physicians and scientists) and citizens at the grassroots. Studies of this period have also identified a decisive role for epistemic communities.⁴

- **Nonproliferation, arms control and testing talks, covering the period 1964 to 1980,** during which concepts of strategic deterrence and arms control dominated policy thinking in Washington. This was a wilderness time for test ban advocates, as proliferation and the arms race were addressed by governments through détente and the NPT, the Strategic Arms Limitation Treaties (SALT I and II), and the Anti-Ballistic Missile (ABM) Treaty. This period was one of cold war superpower diplomacy, with diminished public interest in nuclear issues: two interim agreements set testing thresholds, but trilateral (US-UK-USSR) talks on banning underground testing failed.
- **Cold war brinkmanship and public opposition, from 1981 to 1989.** This was a decade in which deteriorating strategic relations between the United States and Soviet Union led to nuclear weapons becoming highly salient public and political issues in Europe and the United States. Civil society engagement was transformed during this period: traditional single-issue politics were challenged, stimulating the rise of democratic (anti-communist and anti-capitalist), environmental, feminist and anti-nuclear actors, linking Western movements with dissident civil society actors demanding greater democracy in the Soviet bloc. Nuclear testing was at best a marginal issue, clinging to the coat-tails of broader anti-nuclear campaigns; but some direct action, combined with diplomatic strategies in which NGOs worked with NNWS, were employed to keep the goal of a CTBT alive.
- **Disintegration, realignment and renewed multilateralism, 1990-1994.** As a consequence of a pincer movement between public campaigning and legislative strategies, first Russia, then France and the United States declared moratoria on testing. In effect, this may be treated as the “prenegotiation” phase for the CTBT, as diplomatic strategies between nonstate actors and NNWS increased political pressure to bring the NWS to the negotiating table. This period will be addressed in chapter 4.

Looking at the first three periods in turn, Chapter 3 considers the major political and diplomatic events relating to multilateral nuclear arms control and initiatives to curb nuclear testing, focusing on the actions and influence of civil society actors as well as states.

Settling for the Partial Test Ban Treaty, 1949-1963

Already established peace-oriented organisations, such as the Nobel-prize-winning Women's International League for Peace and Freedom (WILPF), the Fellowship of Reconciliation, and the Religious Society of Friends (Quakers) began protesting against nuclear weapons soon after the bombs were dropped on Hiroshima and Nagasaki in 1945, but received little attention. Scientists involved in the Manhattan Project raised questions about ethics and control, and in 1945 some of them founded *The Bulletin of the Atomic Scientists*.⁵ These scientists were some of the earliest nongovernmental actors to put together information on the risks of nuclear proliferation and the health and environmental dangers from nuclear testing.⁶

The Soviet Union conducted its first atomic explosion in 1949. This was followed by a thermonuclear weapon test in 1953, just one year later than the United States, causing consternation in the West. Britain joined the nuclear club with an atmospheric explosion at Monte Bello, in Australia's backyard, on October 3, 1952. International attention was drawn when a US hydrogen bomb test, conducted on March 1, 1954 and codenamed 'Bravo', produced a much greater yield than anticipated (about 15 megatonnes).⁷ The huge blast vaporised two atolls in the Pacific Bikini Islands and contaminated nearby islanders. It also caused severe radiation sickness and at least one death among Japanese fishermen on a nearby tuna trawler, the misnamed "*Lucky Dragon*", provoking protests in the Japanese parliament, which called for a suspension of nuclear testing. On April 2, 1954, Prime Minister Nehru of India called for an immediate "standstill agreement" on nuclear testing. Nehru's proposal for a test ban was submitted for consideration to the UN Disarmament Commission on July 29, 1954, and from then on a CTB was a consistent demand from the growing number of developing countries that formed the Movement of Non-Aligned States, of which Nehru became a leading light.⁸

Revealing the ambivalence of policymakers towards nuclear weapons, the mid 1950s witnessed a flurry of disarmament initiatives, even as the arms race began to take hold. Britain, together with France, put forward a three-stage plan for nuclear disarmament in June 1954. The Soviet Union submitted similar proposals in May

1955, which it followed by inaugurating a moratorium on nuclear testing in June 1957, later extended by Nikita Khrushchev, on condition that no other country tested.⁹ By 1957, as Britain conducted its first hydrogen bomb test, nuclear testing had become “a burning public issue”,¹⁰ with women’s groups, scientists and doctors at the forefront of raising public awareness of the dangers of radioactive fallout.

Additionally, new peace groups were formed specifically to address nuclear weapons and testing. Of these, the most important in the West were the US Women’s Strike for Peace, the US Committee for a SANE Nuclear Policy, the international Pugwash Conferences of scientists¹¹, and the British Campaign for Nuclear Disarmament (CND). Together with doctors and dentists, who were concerned about discoveries of strontium 90 and other radioactive isotopes in children’s teeth in the United States and Europe, scientists were prominent in efforts to lobby against nuclear testing, using their professional expertise and standing to raise awareness.¹² At the same time, grassroots initiatives such as the Women’s Strike for Peace, SANE and CND organised rallies, petitions and public protest demonstrations in major cities. In Britain, CND marches from London to Britain’s main nuclear production facility at Aldermaston in 1958 and, subsequently, from Aldermaston to London, attracted tens of thousands of supporters and were given significant media coverage. Through demonstrations and local organising, these public campaigns sought to influence government policy by raising public concern and fostering direct contact with legislative representatives. Sections of the Women’s Strike for Peace and CND also formed direct action wings, prepared to break trespass laws at nuclear test sites and facilities, with activists willing to go to prison to highlight the urgency of opposing nuclear weapons and testing.¹³

The Soviet Union’s launch of *Sputnik I* on October 4, 1957, together with its tests of Intercontinental Ballistic Missiles (ICBM), shook US confidence.¹⁴ Soon after, President Eisenhower announced that he too favoured a nuclear test ban. Acknowledging growing public concern about testing, he cited radioactive fallout and the need to curb the nuclear arms race.¹⁵ Eisenhower offered the Soviet Union a two year moratorium on nuclear testing, combined with a halt in the production of fissile materials for weapons purposes. The Soviet Union then backtracked from its earlier

offers and accused Washington of seeking to freeze a status quo in which the United States retained superior nuclear weapon capabilities.¹⁶

Eisenhower persisted, proposing a joint study on verification. The ‘Conference of Experts to Study the Possibility of Detecting Violations of a Possible Agreement on Suspension of Nuclear Tests’ was subsequently convened from July 1 to August 21, 1958 in Geneva. It involved scientists from the United States, Soviet Union, Britain, Canada, France, Czechoslovakia, Poland and Romania. The Experts’ advisory report proposed a verification system based on four technologies – seismic, radio, acoustic and sensors to detect “radioactive debris” – along with on-site inspection of unidentified and suspicious events, saying that this combination of verification approaches would be able to “detect and identify nuclear explosions, including low yield explosions (1-5 kt)”.¹⁷ In order to get this far, however, Eisenhower had found it necessary to go beyond the advice he was receiving from test ban opponents at the Livermore and Los Alamos nuclear laboratories¹⁸ and establish in 1957 a “President’s Science Advisory Committee” (PSAC), comprising scientists who were independent of the nuclear bureaucracy. Unlike the laboratory advisers, PSAC, chaired by MIT president James Killian¹⁹, advised Eisenhower that a test ban could be adequately verified and would be in the best interest of the United States.²⁰

Receiving support from both Khrushchev and the British Prime Minister, Harold Macmillan, Eisenhower then initiated tripartite talks – the Conference on the Discontinuance of Nuclear Weapon Tests – which opened on October 31, 1958, with the objective of a total ban on nuclear tests.²¹ In response, the US nuclear weapon scientists mobilised greater opposition, putting Eisenhower under pressure with data from a series of underground tests on evasion scenarios, codenamed “Hardtack”. Carried out under Edward Teller’s auspices, the new information was released in 1959 and undermined the Geneva Experts’ report by highlighting ingenious ways in which the signals from underground nuclear tests could be concealed or minimised.²² By 1960, convinced by the Hardtack data of the difficulties in verifying a comprehensive ban, the Eisenhower Administration offered a partial ban based on what they considered to be verifiable by remote sensing and national technical means.²³ However, in May 1960, the “U-2 incident” in which a US reconnaissance flight was shot down over Russian territory, led to US-Soviet counter accusations,

causing the Summit Conference in Paris to collapse.²⁴ As international conditions deteriorated, the test ban talks went on hold.

Begun under a Republican President, the negotiations proceeded with John F. Kennedy, who took over from Eisenhower in January 1961. Initially he got nowhere, as first the United States and then the Soviet Union resumed nuclear testing after France conducted its first atmospheric test in 1960. After September 1961 and throughout 1962, the USSR exploded an estimated 93 atmospheric tests, and the United States 39. During that time the US nuclear establishment also experimented with 67 underground explosions, while Britain and the USSR each conducted 2.²⁵ Relations between Washington and Moscow deteriorated in a pervasive atmosphere of mistrust and recrimination that reflected and contributed to the construction of the Berlin Wall in August 1961 and the October 1962 Cuban Missile Crisis.

Hampson credits the intensification of public opinion and international pressure for a test ban with forcing a reformulation of US policy.²⁶ Although the trilateral Geneva meetings had fallen apart, the US, Britain and Soviet Union sponsored the creation in Geneva of the Eighteen Nation Disarmament Committee (ENDC), which consisted of five NATO countries, five Warsaw Pact nations and eight states from the self-defined nonaligned, neutral group.²⁷ France, though invited, did not attend. The ENDC started discussing a nuclear test ban in March 1962. Led by Sweden and India, the nonaligned countries attempted to find a compromise.²⁸ With Kennedy taking a more active role, Britain and the United States initiated a draft treaty on April 18.²⁹ The Soviets then reiterated their November 1961 proposal, and in August 1962, Britain and the United States tabled draft partial test ban treaties banning explosions that would spread radioactive contamination beyond the territorial limits of the state.³⁰

These inconclusive ping-pong talks might have continued, despite mounting public anger about the frenzy of atmospheric testing being conducted on both sides. The “shared danger” of the Cuban Missile Crisis supplied the “shock” that forced the protagonists back to the negotiating table.³¹ During the 1962 UN General Assembly, a high profile debate was held on nuclear testing. Thirty-seven NNWS, including the eight nonaligned members of the ENDC, called for atmospheric testing to be halted by January 1, 1963, and a comprehensive or limited treaty accompanied by an interim

moratorium on underground testing. Britain and the United States sponsored a second resolution, calling for a CTBT with international verification or, alternatively, a limited, partial test ban covering the atmosphere, underwater and outer space.³²

When talks resumed in Geneva in early 1963, they got nowhere, as both US and Soviet representatives lobbied the nonaligned delegates to support their positions on inspections. Moreover, as the prospect of a comprehensive ban looked more serious, opposition intensified in Washington, spearheaded by the Senate's Joint Committee on Atomic Energy and the Joint Chiefs of Staff (JCS), who expressed support for continuation of a vigorous programme of nuclear testing and attacked the idea that a CTB could be verified. At the same time, however, the Senate was "showered with letters, phone-calls and petitions" calling for an end to testing.³³ Tripartite negotiations were suggested in April 1963. Kennedy then cancelled three nuclear tests and made positive overtures to the USSR in what became known as his "peace-speech" at the American University in June³⁴ (although their conciliatory effect was dented by his "Ich bin ein Berliner" speech later that month).³⁵ With the UK playing an important bridging role, tripartite negotiations commenced in Moscow on July 15.

At various times, Kennedy, Khrushchev and Macmillan had all said that they wanted a comprehensive test ban, although the United States at different times had submitted three proposals for partial bans to get around the verification problems stressed by its nuclear establishment experts. When their representatives met in Moscow, it was decided to put the verification issues aside and settle for a three-environment ban. Importantly, this gave the nuclear scientists unlimited license to experiment with their newly-discovered underground testing technologies. After five years of on-off negotiations, on August 5, 1963, the three governments signed the Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water, also known as the Partial Test Ban Treaty (PTBT).³⁶

The PTBT entered into force on October 10, 1963. International verification was not part of the agreement, which would rely on national intelligence and technical means for monitoring compliance. No mention was made of a verifiable threshold for underground testing, which had been so much a part of discussions in the late 1950s. Nor was there any mention of a moratorium on underground testing pending

agreement on verification. Weakly echoed in Article I, only the preamble referred directly to a comprehensive test ban: *"Seeking to achieve the discontinuance of all test explosions of nuclear weapons for all time, determined to continue negotiations to this end, and desiring to put an end to the contamination of man's environment by radioactive substances..."*

How Testing Went Underground

Despite the personal commitment of Eisenhower, Kennedy, Macmillan and Khrushchev, the test ban negotiations were subject to fluctuating relationships and the rivalry and mistrust of cold war politics. The negotiations were dominated by conflict and muddle over verification, fuelled principally by scientists in the US nuclear weapon laboratories who devised complex evasion scenarios that fed American anxiety about the possibility of Soviet cheating. The Soviet Union, for its part, suspected that American insistence on elaborate, intrusive verification masked an espionage objective. In effect, the Americans wanted to make sure the Soviets could not cheat and the Soviets wanted to stop the Americans spying. In that conflict lay a core dilemma that was to be replayed many times, with a different cast, in test ban and other arms control negotiations: the payoff between adequate and bearable intrusion.³⁷

The Cuban Missile Crisis, combined with the ability of Kennedy and Khrushchev to respond to that narrow escape with better mutual respect and communication on nuclear and security issues, shocked the nuclear powers into trying to lock down some form of test ban in 1963. While all three governments had to contend with opposition to a test ban from special military and laboratory interests, this was a particular problem for Eisenhower. The role of the US nuclear weapon laboratories, particularly a small coterie around Edward Teller and Albert Latter, was significant in derailing the chance of agreement following the 1958 Geneva Experts' Report. After the U-2 incident, Khrushchev was also more vulnerable to test ban opponents in the Soviet military and the nuclear laboratories.³⁸

Kennedy became determined to solve the test ban impasse and devoted more attention to this subject than Eisenhower. Although it later became clear that the US nuclear weapon scientists with their "big hole obsession" about evasion and decoupling

scenarios had greatly exaggerated what the Soviet Union might gain from cheating with underground testing,³⁹ ratification politics ensured that even Kennedy could not afford to ignore the laboratories and sign a comprehensive test ban in 1963. Though he himself appeared less worried by the technical weight of their information, recognising that this too represented politics and special interests, Kennedy understood that Teller's arguments could sway senators, and he needed a two-thirds majority for ratification of the treaty.⁴⁰ Kennedy had further domestic difficulties. On realising that the President was really determined to achieve the CTBT, some senators and the JCS had come out in opposition to the 1962 draft under consideration. However, recognising that the PTBT had wide popular support in the aftermath of the Cuban Missile Crisis, the Joint Chiefs pushed for additional resources and safeguards rather than seeking to block ratification.

Backed by the nuclear establishment, the safeguards were intended to ensure that the test ban would not erode support for the nuclear weapons programmes and laboratories. They also tied the US Government into Senate-supported commitments that would make it difficult to follow the PTBT with any further nuclear arms control or test restraints, at least for the near future. The safeguards, which Kennedy accepted, were presented as insurance against treaty violations, abrogation or the discovery of Soviet superiority, as follows:

- “1) The conduct of comprehensive, aggressive, and continuing underground nuclear test programs...;
- 2) The maintenance of modern nuclear laboratory facilities and programs...;
- 3) The maintenance of the facilities and resources necessary to institute promptly nuclear tests in the atmosphere...; and
- 4) The improvement of our capability... to monitor the terms of the treaty, to detect violations, and to maintain our knowledge of Sino-Soviet nuclear activity, capabilities, and achievements.”⁴¹

These early strategies of test ban opponents in the laboratories, and the political solution of imposing safeguards to protect – and increase – resources to the nuclear laboratories and their weapons programmes were closely mirrored when two later US administrations tried to negotiate a CTBT, in 1977-80 and again in 1994-96. In accepting a partial test ban and in conceding to pressure from the JCS for the programme of underground testing to be intensified, Kennedy ensured the

laboratories' support and achieved a quick and smooth ratification of the treaty. He also enabled the nuclear weaponeers to consolidate their power base and resources, which enhanced their ability to drive the nuclear arms race.

The PTBT was an early success for nonproliferation and environmental protection, but by the time it was agreed, it did nothing for disarmament. Both superpowers were becoming concerned about new countries getting nuclear weapons.⁴² From contemporary accounts it is clear that a compelling domestic argument on the American side was that US superiority in nuclear weapons development was more likely to be maintained under a test ban, whereas the USSR might catch up if testing continued unabated. Moreover, the volume of Soviet tests in 1961-2 shook American confidence in the US lead in nuclear weapon development.⁴³

A strong case has been made for treating Eisenhower's PSAC as an "epistemic community" of liberal nuclear scientists interested in promoting arms control.⁴⁴ It undoubtedly acted as a counterweight to the strident pro-testing claims of certain nuclear establishment scientists, but cutting across the governmental, bureaucratic, academic and nongovernmental sectors, Eisenhower's PSAC exerted influence in part because it eschewed the radical, progressive demands of the disarmament lobby. Sharing values associated with the diplomatic control and management of proliferation and the nuclear relationship between the United States and Soviet Union, PSAC was more effective in narrowing the zone of perceived viable agreements on disarmament than in reframing the agenda of the military/nuclear establishment, and so helped to establish the norms of arms control at the expense of disarmament.

When the PTBT was agreed in 1963, it was hailed as a victory, but contained an important element of defeat and some bitter lessons for disarmament advocates. Although most of the NGOs had called unequivocally for a comprehensive test ban, much of their public and political appeal had focused on the harm from radioactive fallout to public health. The PTBT banned testing in the atmosphere, outer space and underwater, thereby reducing the risks to public health and the environment. It also removed the visible reminder of the nuclear arms race. After 1963, nuclear testing continued out of sight, still fuelling the qualitative arms race with new and advanced weapons systems. The PTBT might have enshrined the objective of the

“discontinuance of all test explosions of nuclear weapons for all time”, but much of the driving force to achieve a comprehensive ban was dissipated once testing had gone underground.

Nonproliferation, Arms Control and Testing Talks, 1964-1980

The bitter rivalry and brinkmanship that characterised strategic relations between the US and Soviet blocs in the 1950s until the Cuban Missile Crisis was succeeded by a period of relative accommodation, combined with joint efforts to promote nonproliferation. US-Soviet détente continued for most of the 1970s, during which time US security policy was dominated by theories of balance of power, deterrence and arms control. Although there were vigorous peace movements in the United States and elsewhere, they focused on the Vietnam⁴⁵ War, not nuclear weapons.

This period has been extensively covered in international relations literature, dominated by the perspectives, power and perceived interests of the superpowers.⁴⁶ To do justice to the various different treatments of this period of the cold war would fill several books. For the purposes of this thesis, I focus on developments relating to multilateral arms control and nuclear testing, not only from the perspective of the major powers, but also through the perceptive lens of one of the most noted nonaligned critics of superpower-dominated arms control, Alva Myrdal, Sweden’s ambassador in Geneva from 1962-1966 and Minister for Disarmament, 1966-1973.

The Nuclear Nonproliferation Treaty

The NPT, which had its origins in resolutions from Ireland and Sweden to the UN General Assembly in 1961, was concluded in 1968 and entered into force in 1970.⁴⁷ Sweden’s approach focused on the voluntary and regional self-organisation of nuclear-free states and explicitly required the NWS to discontinue nuclear testing.⁴⁸ But it was the Irish proposal, with the primary aim of making it impossible for additional countries to join the nuclear club, that became the main basis for debate and negotiations in the ENDC.⁴⁹

Years passed without progress, the fault of the United States and Soviet Union, according to Myrdal, who noted: “Confident of their power, [the superpowers]

attempted to hold unrestricted rights to possess, deploy, and develop nuclear arms quantitatively and qualitatively, while showing overbearing disregard for the three minor nuclear weapon powers, and resolutely closing the options for all other nations to go nuclear”.⁵⁰ India, which by that time had a significant nuclear programme of its own underway, put forward a proposal for a UN agenda item on nonproliferation in 1964, and then joined forces with Sweden to demand an integrated approach to nonproliferation, including “some other measures affecting directly the nuclear weapons capability of the nuclear powers”.⁵¹ This was supported by the eight nonaligned members on the ENDC. After China joined the nuclear club, and “to retain the initiative”, according to Myrdal, the United States and Soviet Union coordinated submission of their own draft treaties to the General Assembly in 1965, based on the Irish approach, which drew distinctions between the obligations on nations possessing nuclear weapons and those without.⁵² There followed further negotiations in the ENDC and debates in the General Assembly, in which some of the other countries pushed hard for the treaty to contain disarmament-related commitments, such as a CTBT, a cut-off of fissile material production for weapons purposes, and support for regional nuclear weapon free zones.

In August 1967, the United States and Soviet Union again submitted identical draft treaties to the ENDC, superseding the previous drafts of 1965.⁵³ The new drafts were hardly more welcome to the NNWS, who made further proposals linking the NPT to nuclear disarmament and the process of arms control. In January 1968, the superpowers tabled revised (and still identical) draft treaties at the ENDC, incorporating a number of the NNWS’ concerns, though in watered down language. A special session of the General Assembly was held in April 1968, at which the United States and Soviet Union jointly tabled their draft treaty.⁵⁴ The draft contained a preambular reference recalling the PTBT pledge to seek the discontinuance of nuclear tests. Reflecting some of the NNWS concerns, the superpowers had also revised the Article IV provision on “peaceful uses of nuclear energy”, included a new Article V on “peaceful nuclear explosions” (PNE) and a new Article VII on nuclear weapon free zones. A rather vague commitment to disarmament appeared in a new Article VI. This final bilateral draft was debated and slightly amended by the ENDC members, and then adopted by the General Assembly just three months later, on June 12, 1968.

With 187 states parties in 2002, what does the NPT show about multilateral regime-building? Though the ENDC played a significant role in ensuring that the NPT would link disarmament with nonproliferation, the superpowers maintained overall control by tabling identical treaty drafts and, finally, a joint draft treaty. One immediate consequence of the inequalities noted by Myrdal and others was that a number of important countries (Argentina, Brazil, France, India and several African states) abstained on the UN resolution recommending adoption of the NPT in June 1968, and – in a move that was to be echoed 28 years later with the CTBT – India stated its refusal to join the NPT, on the grounds that it was discriminatory. Myrdal herself castigated the NPT as a “grossly discriminatory treaty”, citing a lack of balance between obligations and benefits for the NNWS.⁵⁵

Though the NPT is widely accepted as the cornerstone of the multilateral nonproliferation regime, and Ruggie cited it as a notable success for multilateralism⁵⁶, in both its negotiations and implementation it fails to meet at least two of Ruggie’s principles of multilateralism: indivisibility and nondiscrimination. The requirements on the five defined in the treaty as “nuclear weapon states” were rather different from the obligations imposed on the rest, whose only option in joining the NPT would be as a non nuclear weapon state. Only the NNWS were subject to mandatory IAEA safeguards and inspections on their nuclear facilities to verify their compliance with their NPT obligations. While it can be argued that the discrimination between nuclear weapon possessors and the rest is mitigated by the Article VI disarmament commitment,⁵⁷ that would require substantial progress in implementing Article VI, which has not been the case over the past 35 years. Article IV, interpreted by many non nuclear weapon parties to the treaty as promising technology assistance in developing and using nuclear energy, may be considered an example of diffuse reciprocity. Certainly it served as an incentive to bring NNWS into the treaty early on, but has lost much of its incentive value – and, in view of demonstrated abuses, its credibility – in recent years.⁵⁸

Détente and Arms Control

Opening with entry into force of the NPT, the 1970s was a decade of détente, appearing to vindicate theories of bipolar stability, popular in the late 1950s and early

1960s.⁵⁹ Nuclear arms control was dominated by bilateral negotiations between the United States and the Soviet Union.⁶⁰ The two largest NWS began to recognise the need to show they were making some effort to curb their own spiralling arms race; not just to give greater credibility to the NPT, which they were encouraging others to join, but also because of the consequences of an uncontrolled arms race for their own economies and national security. Early in the 1970s they developed a linked offence-defence approach to arms control, exemplified by two closely related US-Soviet treaties, the ABM Treaty, which enshrined the concept of deterrence based on mutual vulnerability, and the SALT I Interim Agreement, the first to limit strategic nuclear weapons. The two treaties were designed as a package and entered into force together in 1972. During this time, the two governments entered into negotiations on SALT II.

In 1974 and 1976, two bilateral treaties limiting the yield of underground nuclear test explosions to 150 kt were also concluded, the Threshold Test Ban Treaty (TTBT) in 1974 and the 1976 Peaceful Nuclear Explosions Treaty (PNET). John Edmonds, who led the UK delegation at the later trilateral talks, characterised the contribution of these two treaties as “negative. Their prohibition of tests yielding 150 kt imposed no serious limitation on further nuclear weapons development by the two superpowers.”⁶¹ Myrdal was even more damning, calling the TTBT a “disgraceful conspiracy between the two superpowers”.⁶² It was a sham, intended to present the public with an image of restraint and of commitment to arms control, when it actually “strangles all attempts to reach international agreements on a total ban”.⁶³ The scepticism of these two senior diplomats was shared by many others, including Jimmy Carter, who chose not to push for ratification when he took over the US presidency in 1976. Carter criticised the TTBT threshold as too high to provide a genuine restraint on weapons development, and preferred to use his political capital in trying to get a CTBT.⁶⁴ Less criticism was levelled at the PNET, signed two years later. Critics of arms control were prepared to view this as a useful confidence-building measure, providing exchange of data and inspections at proposed sites for PNE.⁶⁵

By the end of the 1970s, détente was failing and though SALT II was signed in 1979, it never entered into force. The deterioration in relations was due to a mix of

geostrategic and political factors, which included the Soviet invasion of Afghanistan, the Soviet veto blocking UN Security Council action in support of the United States during the months long “hostage crisis” at the US embassy in Tehran following the ousting of the US-supported Shah of Iran, the Soviet deployment of SS20s, and NATO’s “dual track” response of deploying intermediate range nuclear forces in Europe. Such events and tensions played into the hands of hawks and contributed to the election victory of President Ronald Reagan in 1980.⁶⁶

Tripartite Testing Talks, 1977-1980

After the TTBT was concluded, the Soviet Union submitted a draft CTBT to the UN General Assembly in 1975. Reacting to criticism from Britain and the United States that its draft was inadequate, particularly on the issues of verification and PNE, Moscow tabled a revised treaty in February 1977, eliciting a more positive response from the newly-elected President Carter, who had made the CTBT a major plank of his election platform.⁶⁷ Following preliminary discussions, tripartite talks were established between Britain, (under Prime Minister James Callaghan), the Soviet Union (General Secretary Leonid Brezhnev) and the United States (President Jimmy Carter) in 1977.⁶⁸

When the second round of meetings resumed at the UK Mission in Geneva on the 25th anniversary of the first UK nuclear test,⁶⁹ the negotiations began in earnest. Edmonds describes three “differences of principle” in the opening positions of Moscow, on the one hand, and Washington and London, on the other: i) the level of intrusion required for verifying a comprehensive test ban; ii) PNEs, which the Soviet Union did not want banned; and iii) the Soviet demand that the treaty should not come into force until France and China acceded.⁷⁰ During the first year the talks made progress: Moscow was willing to include a moratorium (but not an outright ban) on PNE, and moved closer to the US-UK position on verification, while the United States slightly modified its stance on on-site inspections.

The prospect that a CTBT might become possible concentrated minds in Washington. Rather than opposing outright, test-ban opponents in the Department of Energy, laboratories and the JCS reprised the verification arguments that had served so well in the past. Claiming that the verification under consideration would be inadequate to

prevent or detect Soviet cheating at low yields, they pressed for a new, lower threshold instead of a comprehensive ban. With support from their British counterparts, the US nuclear laboratories also asserted that they needed periodic nuclear tests for the safety and reliability of stockpiled nuclear weapons.⁷¹ Carter tried to appease his domestic opponents by proposing a comprehensive test ban of five years' duration, hoping that this would begin to embed the norm. Intensified pressure from the US military and nuclear establishments forced Carter to reduce this to three years' and require further Senate ratification before renewal. In addition, he was inveigled into permitting low yield underground testing up to 100 lbs, for nuclear triggers and "to keep weapon scientists up-to-date".⁷² Carter's appeasement, described by the US House Armed Services Committee as "the worst of both the political and military worlds", was derided by all sides. The British were disappointed, the Russians cynical, and there was media speculation that the three year duration was designed to free the hands of the next president.⁷³ Carter therefore lost the initiative and time ran out on the talks. Margaret Thatcher replaced Callaghan as Britain's Prime Minister in May 1979, with a very different set of priorities and interests.⁷⁴ The talks limped on, but Carter subsequently became mired in the Iranian hostage crisis, which sealed his fate. On the election of Ronald Reagan in November 1980, the United States requested that the tripartite testing talks be suspended. They were never resumed, and in 1982, the Reagan administration formally pulled out.

Good Intentions Lacking Authority

Both the PTBT and the NPT enshrined the objective of a total ban on nuclear testing, but the United States and Soviet Union maintained the dogmas that had characterised their positions during the PTBT negotiations. Washington wanted 'adequate' verification, which was always defined higher than Moscow could accept as 'bearable'. Meanwhile, Moscow held the CTB at bay by contending that testing was only part of the relationship and that the nuclear arms race needed to be addressed as a whole. The two testing treaties signed in the 1970s, the TTBT and the PNET, played the relationship game but were widely viewed as a public relations exercise, to divert attention from the failure of the two superpowers to achieve more important agreements on strategic arms limitations.

In view of Carter's sincere desire for a CTBT, supported with enthusiasm by Callaghan and (more warily) by Brezhnev, why did the tripartite negotiations of 1977-1980 fail? Familiar to analysts of the earlier CTB negotiations from 1958-63 was the opposition of the military and nuclear establishments in the United States, centred around the JCS and the nuclear laboratories, with their bureaucratic representation in the Department of Energy. In addition to casting doubt on the verifiability of a CTBT, an argument that had worked well in creating obstacles twenty years earlier, the nuclear establishment added a further claim: that the United States needed to continue testing in order to maintain the reliability of its nuclear arsenal. This new requirement was designed to appeal to pro-defence conservatives in Congress, and was bolstered by the claim that Soviet weapons would not erode as fast as US weapons.⁷⁵ Carter's vacillation on a short-duration test ban further undermined the negotiations.

The argument from the US and British laboratories for continued testing for safety and reliability represented their own fears about their own future security and special interests (jobs, resources, and challenging work to attract and retain elite scientists). Carter received opposite advice from three very senior, former nuclear weapon scientists, who argued that non-explosive testing could assure the continued operability of the existing arsenal, providing there was no intent to change (i.e. modernise) designs.⁷⁶ Though he was himself under pressure from the UK's nuclear elite, Callaghan tried to persuade Carter not to concede to the nuclear establishment advisers.⁷⁷ By accepting the safety and reliability claims rather than mounting a challenge to their political premise, Carter's failure contributed to the erosion of the nuclear disarmament objective contained in the original concept of the CTBT. Once again, the technological arguments of epistemic actors with political interests hostile to the formation of a test ban regime had been selectively – and largely successfully – deployed as rationale for opposing the President's preference for a comprehensive test ban treaty.⁷⁸ Although it is tempting to conclude that the Soviet military action in Afghanistan and the US hostage stand-off with Iran caused the collapse of the tripartite testing talks, even Kissinger noted that "opponents of the goals of the CTB were able to slow things to a standstill well before Afghanistan and Tehran".⁷⁹

Cold War Brinkmanship, 1981 to 1989

The period from 1981 to 1989 spanned from the cold war's depths to its ending. Despite his best intentions, Carter had proved unable to sustain any significant challenge to the dominance of the nuclear weapons lobby in US strategic decision-making and presided over NATO's decision to deploy 464 single-warhead ground launched cruise missiles in five European countries, and 108 Pershing II ballistic missiles in West Germany.⁸⁰ The dual track decision, so called because deployment was coupled with calls for negotiations with the Soviet Union, reflected growing concern among European members of NATO that their interests were being squeezed between changing American nuclear doctrines and the emergence of a condominium arising from the bilateral arms control relationship with the Soviet Union pursued through the 1970s.⁸¹

Reagan's election complicated the Europeans' dual track strategy. Eager, he said, to consign the Soviet Union to the "ashcan of history", Reagan started his presidency bent on confrontation with the "Evil Empire" and determined to modernise US nuclear capabilities.⁸² US strategic doctrine shifted towards prevailing in a 'limited' nuclear war, in which nuclear tactics could be envisaged as part of a wider conflict without automatically escalating into all-out mutual annihilation.⁸³ Such notions, combined with the deployment of the intermediate range Cruise and Pershing II missiles in Europe, with a 'first use' capability more suited to warfighting than deterrence, contributed to the dramatic rise of the peace movements in the 1980s. European governments found themselves even more squeezed in a US-Soviet game of diplomatic combat and counter-accusation, fuelled by Reagan's zealous anti-communism.

Nuclear deterrence doctrines had gone some way towards reconciling public opinion to nuclear weapons since 1963 as they emphasised that the purpose and role of nuclear weapons was to prevent nuclear war. Talk of 'limited' nuclear war wrecked that uneasy complacency, and proved to be profoundly unpopular. NATO tried to win round public opinion in 1981 by proposing a "zero option" – the elimination of all intermediate nuclear forces from Europe.⁸⁴ In March 1983, Reagan launched the Strategic Defence Initiative (SDI) – a programme of missile defences meant to protect

the United States from a Soviet attack and thereby escape the contradictions of nuclear deterrence and the dilemmas of mutual vulnerability.⁸⁵ SDI – soon ridiculed as “Star Wars” – was attacked from all sides as technologically infeasible and politically destabilising.⁸⁶ Lawrence Freedman argues that as reality diminished Reagan’s hopes for protection from nuclear war through defences, the President became more open to arms control, “the last option for an escape from mutual assured destruction”.⁸⁷

Be that as it may, the crucial turning point occurred when Mikhail Gorbachev took the helm of the Soviet Communist Party in 1985. Badly bogged down in Afghanistan, beset by growing social and economic crises across the Soviet bloc, Gorbachev undertook a programme of *glasnost* (openness) and *perestroika* (reconstruction), which included significant concessions in nuclear arms control. In a speech on January 15, 1986, he offered a plan for total nuclear disarmament. Nine months later, at the US-Soviet summit in Reykjavik, Gorbachev and Reagan “began to outbid each other” in visions of how to remove the nuclear threat through disarmament.⁸⁸ As their bureaucracies scrambled to prevent such “utopianism” from gaining a hold, NATO was confronted with an unanticipated Soviet acceptance of its “zero option”. The direct outcome of the Reykjavik Summit was the Intermediate Nuclear Forces (INF) Treaty, which was made possible not only because of the two leaders’ apparent desire to see progress in disarmament and arms control, but because, under Gorbachev, the Soviet Union was more willing to accept intrusive verification.

The deployment of the new generation of missiles had provoked a volcanic eruption of antinuclear activism throughout Europe. There was a dramatic increase in the membership of established anti-nuclear organisations such as CND, but even more significantly, new kinds of peace movements and civil society engagement developed, fusing feminist and environmentalist concerns.⁸⁹ In the United States too, anti-nuclear opposition was mobilised in response to growing fears of nuclear war as US-Russian relations deteriorated.⁹⁰ Despite the upsurge of protests, however, little attention was on nuclear testing, and hopes for CTB negotiations continued to be thwarted.⁹¹ One tragic incident briefly returned nuclear testing to the international headlines in 1985. The environmental organisation Greenpeace, which had campaigned against nuclear testing since 1971, was preparing to lead an anti-nuclear

flotilla to the French nuclear test site in the South Pacific, when French secret service agents bombed its flagship, the *Rainbow Warrior*, in Auckland Harbour on July 10, killing a photographer, Fernando Perreira.⁹²

Greenpeace had planned a pincer action to draw attention to nuclear testing by combining direct action and diplomatic pressure. Its diplomatic strategy was based on the NPT's preambular commitment to the discontinuance of nuclear testing and made use of the fact that this was one of the priority issues raised by the NNWS at the five-yearly review conferences of the NPT. Utilising lobbying and media strategies, Greenpeace planned to prevent consensus on the final document of the Third NPT Review Conference in July 1985, unless the nuclear weapon states agreed to negotiate a CTBT. They managed to make allies among NPT parties, especially the nonaligned states, but failed in their bid to get a binding commitment on a test ban.⁹³ Despite this diplomatic defeat, test ban advocates were rewarded when Gorbachev declared a moratorium on Soviet testing on August 5, 1985. The moratorium was both a bid for international public opinion at the height of the stand-off over the intermediate nuclear forces in Europe, and a response to nonaligned and nongovernmental pressure. These included appeals from the Five Continent Peace Initiative, coordinated by Parliamentarians for Global Action (PGA), an NGO whose membership consisted of democratically elected representatives from parliaments and legislatures around the world, and the recently formed International Physicians for the Prevention of Nuclear War (IPPNW).⁹⁴

The Soviet moratorium lasted 19 months, despite receiving no positive response from the other nuclear weapon states. During this time, the Democratic majority in the US House of Representatives attempted to exert pressure on the Reagan administration with an initiative to cut off funding for nuclear tests above a 1 kt threshold. Once again, however, scepticism about the verifiability of a CTBT was marshalled on behalf of intelligence advisers and Republican opponents to explain and justify the failure of the tripartite testing talks. To discredit these familiar – but unsubstantiated – claims of non-verifiability, scientists from a Washington-based environmental organisation, the Natural Resources Defense Council (NRDC) proposed a joint verification experiment with the Soviet Academy of Sciences (SAS). Despite official Reagan administration opposition, supporters in the State Department made it

possible for scientists from the United States and Soviet Union to meet, plan, and carry out the placement of seismic stations around the Nevada test site and Semipalatinsk, in Kazakhstan. The Soviet participants enjoyed the support of Gorbachev, but had to contend with resistance from the Foreign and Defence Ministries.⁹⁵

The joint experiments lasted for 14 months. Making use of control chemical explosions of 10-20 tons and a small, local earthquake, they showed that regional monitoring could detect a de-coupled (masked) 1 kt explosion and distinguish between similarly located earthquakes and explosions. Whilst the project was credited with assisting Gorbachev to win the support needed to extend the Soviet moratorium in 1986, the initial US impact was on Congressional attempts to build verification confidence for ratifying the much-maligned TTBT and PNET. Most importantly, the project flushed out a number of contradictions in the positions of US test ban opponents, causing the Reagan administration to spin between welcoming the pressure on the Soviets to engage in cooperative verification to portraying Gorbachev's support for the project as an attempt to "confuse the domestic debate about the need for American nuclear testing" and to "promote an inequitable and unverifiable ban on nuclear testing".⁹⁶

Although the nuclear laboratories again sought to use science to blindside the politicians into rejecting a CTBT, they were no longer able to rely on verification arguments to do the job. The belief of many Americans that verification was apolitical and that the scientists from the national laboratories were simply providing neutral facts and assessments had begun to give way to greater awareness of the manipulative potential of science. This awareness gradually combined to give greater confidence in verification technology. Losing verification as their main fear-inciter, the laboratories starting pushing more on arguments related to the safety and reliability of the nuclear arsenal. Though they were successful in intimidating some non-scientist policymakers, the safety and reliability arguments were more obviously politicised from the beginning, and therefore less effective than verification arguments had proved to be in the earlier attempts to block a CTBT. Applauded for their attempts to bridge the confidence gap on verification, the NRDC-SAS experiments had diminished the potency of the politics of verification.⁹⁷

Under pressure from his own military and nuclear establishments, and having failed to get significant political gains from the Soviet moratorium, Gorbachev resumed testing in February 1987, after the first US test of the year. Shortly thereafter, the Soviet nuclear weapon programme ran into trouble from Kazakh nationalists, newly active as Soviet hegemony began to fracture. Following two Soviet tests at the Semipalatinsk 'Polygon' test site in February 1989 that had vented unexpected amounts of radioactive gases, Olzhas Suleimenov, a popular Kazakh poet, launched the Nevada-Semipalatinsk Movement with the avowed aim of shutting the largest Soviet test site down.⁹⁸ The choice of name deliberately made links with American opponents of nuclear testing who demonstrated each year at the Nevada Test Site.

After initiating his movement, Suleimenov recruited local doctors and nationalists and also made contact with international NGOs, notably IPPNW, Greenpeace and the Western Shoshone Nation (whose tribal lands known as Newe Segobia lay at the centre of the site in Nevada used for US and British testing). During 1989-1990, the Nevada-Semipalatinsk Movement held meetings and demonstrations in several Kazakh and Russian cities, conducted epidemiological research, and released a series of filmed documentaries which mixed medical science and harrowing pictures of deformed and brain-damaged children. Suleimenov's tactics are widely credited with forcing the Soviet government to cancel 11 out of 18 scheduled tests in 1989. In May 1990, the Nevada-Semipalatinsk movement and IPPNW jointly organised an International Citizen's Congress for a Nuclear Test Ban, attracting 600 Soviet and international participants to Semipalatinsk, where rallies were held with thousands of local people. The Kazakh movement against testing grew, incorporating the populations of villages adjacent to the test site, as well as politicians and businesses in the towns. As its control of the Soviet republics slipped, Moscow cancelled more planned tests and announced that the Semipalatinsk site would be closed by 1993. The Soviet military began preparing to conduct further underground explosions at their Arctic test site on Novaya Zemlya.⁹⁹

Nuclear testing, disarmament and nonproliferation

Nuclear testing is not essential for basic nuclear weapon acquisition, but it contributes to the development of militarily reliable nuclear forces, modernised nuclear weapon

systems, and sophisticated methods of delivery, including multiple independently targeted re-entry vehicles (MIRV). A test ban was therefore linked with calls for nuclear disarmament from very early on. Although the major environmental and health impacts are thought to derive from atmospheric and underwater testing, banned in 1963 (and finally halted in 1980¹⁰⁰), concerns about radioactive contamination and health and environmental harm have continued to play an important role in mobilising public opinion for a test ban. In the absence of further direct nuclear weapon use since 1945, testing has supplied a significant symbolic component of the fear and opprobrium attached to the concept of nuclear weapon use since the mid-1950s.¹⁰¹ This means that moral appeals from civil society and NNWS as well as security and legal¹⁰² arguments against nuclear weapons have played a significant role in keeping nuclear disarmament on the agenda. However, networks of epistemic actors based primarily in the United States helped to shift the emphasis of test ban efforts from disarmament to arms control, at the same time providing arguments to counteract the nuclear establishment's claims that a test ban was unverifiable.

The fall of the Berlin Wall on November 9, 1989 is viewed as the defining moment for the end of the cold war. But in relation to arms control, the pivotal date was December 8, 1987, when the INF Treaty was signed by Reagan and Gorbachev in Washington. This treaty, which eliminated a whole category of modern nuclear weapons, was an important departure from past arms control approaches. It was billed by Reagan and Thatcher as a victory for their policy of "negotiating from strength", but the reality is more complex. The INF Treaty, though itself bilateral, presaged the end of bipolarity, and was largely the product of resurgent civil society engagement in nuclear and security concerns, combined with political change in the Soviet Union and a Europe-wide loss of confidence in the concepts of nuclear security and strategic deterrence. Intentionally making people-to-people contacts with Eastern Europe to counteract the propaganda of dehumanising enemy images, the Western peace movements helped widen the cracks in Soviet society that had become more persistent with the rise of Solidarity in Poland.¹⁰³

The achievement of the INF Treaty and the dissolution of the blocs were the consequence of political and structural forces and the growth of a multistranded and more confident civil society activism. Strategies that amplified and integrated normal

emotional responses such as fear of nuclear war with intellectually credible steps to reduce the risks and remove the causes of the threat simultaneously challenged the military deployments and political systems and undermined the rationalist dichotomy that held reason and emotion as adversarial components in a zero-sum security dilemma. The effects were felt by authoritarian governments from Eastern Europe to the Philippines.

Compounding the difficulties in assessing the impact of civil society on political transformation, influential (mostly realist) analysts have preferred to represent public actions as naïve and “uninformed”, portraying their effect on political changes and security decisions as unanticipated by-products rather than the consequence of intentional and thoughtful (if seldom unitary) strategies.¹⁰⁴ Jeffrey Knopf’s “three and three” analysis offers a richer and more nuanced explanation for how the INF treaty came about than the ‘negotiations from strength’ paradigm of the realists. Knopf recognises the intentionality of civil society and argues that in addition to domestic civil society pressure on governments, three different forms of transboundary interaction were influential in achieving the outcome – transnational, among civil societies; transgovernmental, between government officials; and cross-level, involving a complex interplay of links between government actors on one side and domestic actors on the other.¹⁰⁵

The next chapter, which addresses the 1990-1994 period characterised by cold war disintegration and renewed interest in multilateralism, will give more detailed consideration to the roles of transnational civil society transboundary actions to bring the major powers to the negotiating table.

Notes

¹ The Baruch Plan, presented to the UN Atomic Energy Commission, June 14, 1946.

² Some analysts also put the Warsaw Pact and the North Atlantic Treaty Organisation (NATO) into the category of multilateral security organisations, although as regional military alliances, they are somewhat different from the norm-building concepts of multilateralism explored in this thesis. See Fen Osler Hampson, Harald von Riekhoff, and John Roper, *The Allies and Arms Control*, (Baltimore and London: The Johns Hopkins University Press, 1992).

³ In 1996-7, however, anti-personnel landmines attracted high public and political visibility, chiefly through a highly effective awareness-raising campaign orchestrated by the International Campaign to Ban Landmines, which included the involvement of Diana, Princess of Wales, in the year before she died.

⁴ See Emanuel Adler, "The emergence of cooperation: national epistemic communities and the international evolution of the idea of nuclear arms control", in Peter M. Haas, (ed), *Knowledge, Power and International Policy Coordination*, (Columbia, SC: University of South Carolina Press, 1992) pp 101-145; and Fen Osler Hampson with Michael Hart, *Multilateral Negotiations: Lessons from Arms Control, Trade and the Environment* (Baltimore and London: The Johns Hopkins University Press, 1995), especially pp 55-76.

⁵ Two years later *The Bulletin of the Atomic Scientists* established the Doomsday Clock, which graphically depicted the risk of nuclear war in terms of minutes to midnight.

⁶ In a period of post world war uncertainty, the United States itself proposed nonproliferation measures in its 1946 Baruch Plan, including a halt to the production of plutonium and highly enriched uranium for weapons. See Lawrence Freedman, "The Post-War Assessments", Philip Bobbitt, Lawrence Freedman and Gregory F. Treverton (eds.) *US Nuclear Strategy*, (New York, NY: New York University Press, 1989), pp 46-53.

⁷ Glenn T. Seaborg, *Kennedy, Khrushchev and the Test Ban* (Berkeley, CA: University of California Press, 1981) p 4.

⁸ G. Allen Greb, "Survey on past nuclear test ban negotiations" in Jozef Goldblat and David Cox, *Nuclear Weapon Tests: Prohibition or Limitation?*, (Oxford: Oxford University Press, 1988) p 96.

⁹ Seaborg, 1981, pp 5-10. Following Stalin's death and a brief power struggle, Khrushchev consolidated his power by becoming General Secretary of the Soviet Communist Party in March 1958.

¹⁰ Valerian Zorin, the Soviet Ambassador to the United Nations, noted that "parliaments, governments and a great many public organisations" regarded nuclear testing as "a burning political issue" quoted in Greb, 1988, p 97.

¹¹ The Pugwash scientists included many Nobel prize winners and some who had worked on the Manhattan Project. See Joseph Rotblat, *History of the Pugwash Conferences* (London: Taylor and Francis, 1962). Public concern turned nuclear testing into a dominant theme in the 1956 US elections. See Stanley A. Blumberg and Gwinn Owens, *Energy and Conflict: The Life and Times of Edward Teller*, (New York: G.P. Putnam's Sons, 1976) p 396. I am also very grateful to Daryl Kimball of the Arms Control Association, Washington D.C., for sharing with me his unpublished research on the history of US NGOs and their work on the test ban.

¹² *Radioactive Heaven and Earth*, a Report of the IPPNW International Commission to Investigate the Health and Environmental Effects of Nuclear Weapons Production and the Institute for Energy and Environmental Research (London: Zed Books, 1991)

¹³ The UK-based Direct Action Committee Against Nuclear War, for example, was active from 1957 to 1961, before being folded into the Committee of 100. During the late 1950s and early 1960s, these groups organised sit-downs at the Ministry of Defence and nuclear bases in Britain, with the aim of developing a public campaign on civil disobedience against nuclear weapons.

¹⁴ See Lawrence Freedman, *The Evolution of Nuclear Strategy*, second edition, (London: Macmillan Press Ltd, 1989), pp 139-154.

¹⁵ John Edmonds, "A Complete Nuclear Test Ban – Why Has it Taken so Long?" in *Security Dialogue* 25:4 (1994) pp 375-388. As noted by Calvocoressi, the US and Soviet moratoria were possible in large part because both countries had just concluded their planned series of tests. Peter Calvocoressi, *World Politics since 1945*, sixth edition, (London and New York: Longman, 1991) p 36. However, a US-wide Gallup poll in 1957 showed that 63 percent of Americans favoured a nuclear test ban, compared with only 20 percent in 1954. See Hampson, 1995, p 57.

¹⁶ Seaborg, 1981, pp 6-10.

¹⁷ The Geneva Experts Group outlined a network of about 170 control posts on land, each staffed by about 30-40 technicians, and provision for on-site inspections for events detected but not positively identified. It concluded "that it is technically feasible to establish with the capabilities and limitations indicated...a workable and effective control system to detect violations of an agreement on the worldwide suspension of nuclear weapon tests." Sir Michael Wright, *Disarm and Verify*, (London: Chatto and Windus, 1964) Appendix I: Report of the Conference of Experts to study the methods of detecting violations of a possible agreement on the suspension of nuclear tests, Geneva, 1st July to 21st August, 1958, p 165. Wright criticises the Soviet Union for complicating later negotiations by refusing to accept what he said they had been willing to accept in 1958. See also Seaborg, 1981, pp 12-13.

¹⁸ Eisenhower's principal advisers from the nuclear laboratories were Edward Teller, Ernest Lawrence and Mark Mills, who argued forcefully against the idea of either a moratorium or a test ban, claiming that they could not be verified. In 1957, Teller and Lawrence turned an appearance before the Senate subcommittee on Military Applications of the Joint Committee on Atomic Energy, intended to address nuclear reactor products into an impassioned plea about "the great damage which would occur if all

testing were stopped". Invited to meet with Eisenhower, Teller made a strong pitch for underground nuclear testing and development of a "clean bomb" which would "destroy an intended target without releasing radioactivity to be carried by the winds to do damage indiscriminately where no damage was intended." On the basis of these argument, in July 1957, Teller initiated "Project Plowshare" to show that "these 'clean' explosives can also be used in peace as powerful workhorses in mammoth construction jobs". On September 19, 1957, Livermore conducted the first US underground nuclear test – a 1.7 kt blast. Over the next year, further tests were conducted, convincing the scientists that the Nevada Test Site could withstand underground explosions in the range of several hundred kilotons. Blumberg and Owens, 1976, p 395-400.

¹⁹ Killian was additionally given the newly-created position of Special Assistant to the president for science and technology. Hampson, 1995, p 58. Discussing the early formation of what he characterises as an arms control epistemic community at this time, Adler noted that the PSAC scientists "had access to President Eisenhower, who gave support to 'his' scientists". Adler, 1992, p 114. For a number of these scientists, trained mainly in physics and weapons engineering and centred around Harvard University and the Massachusetts Institute of Technology (MIT), involvement with PSAC gave them first-hand experience of arms control through their participation in the test ban talks. Amongst others, Adler identifies Herbert York, Jerome Wiesner, Paul Doty, Hans Bethe, Eugene Rabinowitch, George Rathgens, Spurgeon Keeny and Wolfgang Panovsky, many of whom continued to be active on arms control issues well past their age of professional retirement. Adler, 1992, pp 111-124.

²⁰ Edmonds, 1994, pp 376.

²¹ It is relevant to note here that on July 3, 1958, the United States and Britain signed an Agreement of Cooperation on nuclear research and information. This collaboration helped cement Anglo-US relations, with the result that Eisenhower and Macmillan developed Western positions and policies jointly. In particular, Macmillan made sure that the United States understood that British public opinion strongly favoured a nuclear test ban. One reason for advocating a test ban treaty may have been to divert public attention away from the wider, but related, call for nuclear disarmament. G. Allen Greb, "Survey on past nuclear test ban negotiations" in Jozef Goldblat and David Cox, *Nuclear Weapon Tests: Prohibition or Limitation?*, (Oxford: Oxford University Press, 1988) pp 96-97.

²² Greb, 1988, p 99; and Blumberg and Owens, 1976, pp 406-410. It should also be mentioned that during this time, the short-lived Ten Nation Disarmament Conference considered ambitious recommendations – dismissed as "unreal plans" – from John McCloy and Valerian Zorin, contained in a joint US-Soviet initiative for general and complete disarmament. Peter Calvocoressi, 1991, p 36.

²³ The 1960 Eisenhower proposal covered atmospheric, underwater and outer space tests, as well as underground tests greater than a magnitude of some 10-30 kt, depending on the geological conditions. See Greb, 1988, pp 98-101

²⁴ The U-2 incident strengthened hawks and test ban opponents in the Soviet Union's powerful military, reducing what little room to manoeuvre Khrushchev might have had. Greb, 1988, p 101. In an alternative view, Calvocoressi acknowledges that the U-2 incident contributed to the failure of Khrushchev's policy of rapprochement, but suggests that Khrushchev might have "deliberately engineered this stop on his own policies, possibly in response to pressures from military and pro-Chinese lobbies." Calvocoressi, 1991, pp 28-29.

²⁵ In 1962, Britain began using the Nevada Test Site to conduct underground nuclear tests under US auspices.

²⁶ Hampson, 1995, p 66.

²⁷ See Chapter 2.

²⁸ On April 16, they came up with a proposal that was so ambiguous that both the US and Soviet Union claimed it supported their position on verification! Revealingly, Macmillan observed "the kind of international circus now proposed gave a certain amount of relief and did little harm." Harold Macmillan, *At the End of the Day, 1961-1963* (New York, NY: Harper and Row, 1973) p 143, quoted in Greb, 1988, p 115. See also H. Samir Ahmed, *The Neutrals and the Test Ban Negotiations: An analysis of the Non-aligned States Efforts between 1962-1963*, (Washington DC: Carnegie Endowment for International Peace, February 1967).

²⁹ The US-UK draft accepted several Soviet demands, including: a total ban on tests in space, despite the verification limitations; parity of on-site inspections for the US, UK and USSR; and examination of devices intended for 'peaceful nuclear explosions'. On four crucial areas of verification, however, the Anglo-American position and the Soviets were still far apart: the West wanted an annual quota of 20 on-site inspections but the USSR would accept only 3; the Soviets would accept 15 seismic stations on their territory, staffed by the host country, but the West wanted 19, staffed internationally. While they eventually agreed on a 11 member Control Commission, based on the ratio 4:4:3 (US: USSR: UK), the

West wanted a single 'neutral' administrator. Khrushchev argued that there was no such thing, and called for a 'troika' of administrators from the three original parties, each with a veto. This mirrored Soviet demands for troika leadership of the UN, which it eventually abandoned. The West argued against a troika for the Control Commission on grounds that the veto would be used to avoid any inspections of suspect events. See Seaborg, 1981.

³⁰ Hampson, 1995, p 67.

³¹ McGeorge Bundy, national security adviser to President Kennedy, as quoted in Greb, 1988, p 102.

³² Hampson, 1995, p 68.

³³ Ibid. pp 69-72.

³⁴ Arthur M. Schlesinger Jr., *A Thousand Days: John F. Kennedy in the White House*, (London: Andre Deutsch, 1965) pp 767-770.

³⁵ Ibid. pp 754-755.

³⁶ In the United States the PTBT is more commonly known as the Limited Test Ban Treaty (LTBT).

³⁷ "What the West considered adequate, the Communist countries rejected as unbearable; what the Communist countries considered bearable, the West rejected as inadequate." Wright, 1963, p 76.

³⁸ Though characterised by Arthur Dean as taking the "impossibly restrictive" view that "the only good inspector is a Soviet inspector", Khrushchev did manage to make concessions on the single administrator and on allowing international personnel to service the black boxes. See Arthur H. Dean, *Test Ban and Disarmament*, (New York, NY: Harper & Row, 1966) p 53. US underestimation both of Khrushchev's genuine commitment and of his need to receive concessions significant enough for him to carry his own military hardliners contributed to suspicions about Khrushchev's 1962 offer on inspections which threw away what was probably the last opportunity to achieve a CTBT.

³⁹ In 1962, the VELA tests, conducted at the height of the post moratorium testing, showed that the problems thrown up by the US scientists were exaggerated, as the Soviets had all along claimed. Isodor I. Rabi, a Columbia University scientist in Eisenhower's PSAC, complained that "Teller was brilliant in inventing excuses and ways [the test ban] could be circumvented, far beyond any reaches of common sense." Blumberg and Owens, 1976, p 407. For a thorough discussion of the strategies of anti-test ban scientists in the US nuclear laboratories, see Nancy W. Gallagher, *The Politics of Verification*, (Baltimore and London: The Johns Hopkins University Press, 1999), especially pp 98-102.

⁴⁰ Schlesinger, 1965, p 762. See also Seaborg, 1981, p 128.

⁴¹ This discussion and text of the JCS safeguards is taken from Gallagher, 1999, pp 145-146.

⁴² This concern was made explicit in Kennedy's famous speculation "I see the possibility in the 1970s of the President of the United States having to face a world in which fifteen or twenty or twenty-five nations may have [nuclear] weapons..." John F. Kennedy, news conference, March 21, 1963, quoted in Seaborg, 1981, p 198.

⁴³ Seaborg referred to a discussion of the Principals (Kennedy's principal advisers from the different agencies) on November 22, at which it was accepted that the US position "had been based on the understanding that we were so far ahead in nuclear weapon technology that we could sign a treaty to end tests". Seaborg, 1981, p 121. One reason for Soviet rejection of a partial ban earlier in negotiations was their concern that the US would use underground testing, in which they had the technological edge, to widen their advantage even further. The huge Soviet testing programme in 1961-2 may have narrowed the gap between US and Soviet weapons; it almost certainly allayed some Soviet fears and allowed Khrushchev to show more flexibility. Perhaps most importantly of all, in the years between 1957 and 1963, all three powers had gained confidence that underground testing could fulfil the military and technical demands of their nuclear weapon establishments. Addressing the chicken or egg question regarding the relationship between the development of confidence in underground testing and the PTBT, Samir Ahmed commented "as the Soviet Union became more interested in underground tests, it accepted a partial ban. Or, when for higher political reasons it wanted a partial ban, it developed an active interest in underground tests." Ahmed, 1967, p 94.

⁴⁴ Adler, 1992, pp 101-145; and Hampson, 1995, pp 55-76.

⁴⁵ The UN system recognises Viet Nam as the country's name, but Americans more usually refer to the Vietnam War.

⁴⁶ For superpower based perspectives, see Kenneth N. Waltz, *Theory of International Politics*, (New York, NY: McGraw-Hill, 1979.); Lawrence Freedman, *The Evolution of Nuclear Strategy*, second edition, (London: Macmillan Press Ltd, 1989); Henry Kissinger, *Diplomacy*, (New York, NY: Simon and Schuster, 1994), especially Chapter 28 on.

⁴⁷ The Irish resolution, A/Res/1665, was adopted unanimously and the Swedish resolution A/Res/1664 by 58 votes to 10, with 23 abstentions, (December 4, 1961).

⁴⁸ Alva Myrdal, *The Game of Disarmament: How the United States and Russia run the Arms Race*, (Manchester: Manchester University Press, 1977) pp 166-177. See also Jan Prawitz, *From Nuclear Option to Non-Nuclear Promotion: The Sweden Case* (Stockholm: The Swedish Institute of International Affairs, Research Report 20, 1995) pp 12-18; and Bo K. A. Huldt, "Swedish Disarmament and Security Policy from the 1920s to the 1980s," in *Revue Internationale D'Histoire Militaire, Neutrality and Defence: the Swedish Experience*, (Stockholm: Edition de la Commission Suedoise d'Histoire Militaire, No. 57, 1984) pp 47-53.

⁴⁹ For a detailed history on the NPT negotiations, see Mohammed Shaker, *The Nuclear Non-Proliferation Treaty: Origin and Implementation, 1959-1979*, (London/New York: Oceana, 1980).

⁵⁰ Myrdal, 1977, p 167.

⁵¹ Ibid.

⁵² ENDC/152 and ENDC/152.Add.1 (US Draft) and ENDC/164 and ENDC/175 (Soviet draft). See Savita Pande, *The Future of NPT*, (New Delhi: Institute for Defence Studies and Analyses, 1995) p 7 and p 23 n15.

⁵³ ENDC/192 (US Draft) and ENDC/193 (Soviet draft). Savita Pande, *The Future of NPT*, (New Delhi: Institute for Defence Studies and Analyses, 1995) pp 3-22, and p 23 n 28.

⁵⁴ Myrdal, 1977, p 168. This had previously been tabled at the ENDC on March 11, 1968, see Pande, 1995, p 15.

⁵⁵ Pande 1995, p 17 and Myrdal, 1977, pp 168-171. Four also voted against: Albania, Cuba, Tanzania and Zambia. Of those who abstained or spoke against the NPT in 1968, all but Cuba and India have now acceded. Israel, Pakistan and South Africa voted in favour of the resolution but did not sign. South Africa eventually joined the NPT in 1992 after a fundamental political shift away from apartheid led to the dismantlement of its nuclear weapon facilities and small number of nuclear weapons.

⁵⁶ John Gerard Ruggie (ed.), *Multilateralism Matters*, (New York, NY: Columbia University Press, 1993) p 5.

⁵⁷ Article VI of the NPT reads: "Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to the cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control."

⁵⁸ During the 1990s, there have been growing complaints from a number of NNWS that while they benefit from some aspects of the IAEA's work on nuclear energy (using radioisotopes for medicine and agriculture, for example), technology assistance in developing renewable and more locally manageable energy would be of more use than Article IV as it currently stands. Additionally, a small number of NNWS have also complained that it has not been fairly implemented where less developed countries are concerned. Iran, backed by a number of others, including Algeria, Indonesia, Nigeria, and Syria, has repeatedly raised objections that export controls under the Nuclear Suppliers Group and Zangger Committee are used selectively and undermine the Article IV commitment and the IAEA's role in verifying compliance with the NPT. See Rebecca Johnson, *Indefinite Extension of the Non-Proliferation Treaty: Risks and Reckonings*, ACRONYM 7, (London: The Acronym Consortium, 1995) p 45. For insight into the history of Article IV, and the development of export controls to comply with the spirit, not just the letter of the NPT's nonproliferation commitment, see Harald Müller, "The Internationalisation of Principles, Norms, and Rules by Governments: The Case of Security Regimes", in Volker Rittberger (ed.), *Regime Theory and International Relations*, (Oxford: Clarendon Press, 1993) pp 361-388, especially pp 375-381.

⁵⁹ See Thomas Schelling, *The Strategy of Conflict* (New York, NY: Oxford University Press, 1960); Robert Osgood, "Stabilising the military environment", *American Political Science Review*, LV:1, (March 1961); Malcolm Hoag, "On Stability in Deterrent Races", *World Politics*, XIII: 4, (July 1961).

⁶⁰ Adler provides a fascinating analysis of the role played from the mid-1950s onwards by a largely US-based arms control epistemic community comprising scientists and policy analysts in developing and diffusing the concepts, principles and theories of a security approach based on nuclear arms control rather than self help. Adler, 1992, pp 101-145.

⁶¹ Edmonds, 1994, pp 377-378.

⁶² Myrdal, 1977, p 209.

⁶³ In support of her view, Myrdal quotes the American Academy of Arts and Sciences *Bulletin*, vol. XXVIII, no. 1 (October 1974), reporting on the 1974 US-Soviet summit: "The ultimate mockery at the summit was the "threshold test ban"... that, in the guise of restraint, permits underground explosives equivalent to 150,000 tons of TNT. That is ten times larger than the bomb that obliterated Hiroshima, and larger than almost all the tests conducted by the United States and the Soviet Union in recent years." Myrdal, 1977, p 210.

⁶⁴ Greb, 1988, p 108. Jozef Goldblat, one of the most knowledgeable observers of cold war arms control and multilateral negotiations, offers a plausible analysis that the TTBT was hastily conceived to give the appearance of arms control for public consumption after the United States and Soviet Union had failed to reach a more important agreement on strategic offensive arms limitations. Jozef Goldblat, *Arms Control: A Guide to Negotiations and Agreements*, (London: Sage Publications, 1994), p 46.

⁶⁵ Myrdal, 1977, p 210. The US had terminated its programme in 1977, and the Soviet Union, which did not conduct large enough PNEs to trigger an inspection under the treaty, finally halted its PNE programme in 1989. The PNET may have been associated with a larger US policy objective of opening the Soviet Union up to inspection, if only for the relatively rare events of a nuclear explosion for large scale engineering or mining. Whether or not this objective was explicit, it appears to have been an outcome. Roland Timerbaev, a senior Soviet arms control negotiator at the time, wrote that the PNET “put to test the willingness of both sides, above all of the Soviet Union, to accept highly intrusive verification procedures... [and] may have laid at least some of the groundwork for subsequent verification schemes.” Roland Timerbaev, “A Hostage to Political Realities: a Russian Commentary”, *Security Dialogue*, 25:4 (December 1994), p 389-392, quoted in Gallagher, 1999, p 165. Gallagher, one of the few commentators to view the TTBT and PNET in a relatively positive light, commented that they “served as a dry run in which the superpowers first made a political commitment to limit underground tests and then worked out the details of a cooperative verification system that balanced the risks of cheating and spying, and allocated the costs of verification in an equitable fashion.” Gallagher, 1999, p 164.

⁶⁶ Calvocoressi notes that “The election of Ronald Reagan to the presidency of the United States in 1980 owed a great deal to the feeling that the United States ought to be making better use of its power instead of striking deals with an adversary who was getting stronger and was not to be trusted.” Calvocoressi, 1991, p 49. For insight into the underpinnings of Reagan’s foreign policy, with articles by some of its architects, see William G. Hyland (ed.), *The Reagan Foreign Policy*, (New York, NY: Meridian Books and the Council on Foreign Relations, 1987).

⁶⁷ Edmonds, 1994, p 378.

⁶⁸ Callaghan requested UK participation in the test ban talks, speaking directly to Carter and using the Downing Street hotline to the Kremlin for the first time in five years. Author’s private communication with John Edmonds, April 24, 2002.

⁶⁹ October 3, 1977. Britain’s first nuclear test was conducted on October 3, 1952.

⁷⁰ Though they agreed that would be desirable, Britain and the United States considered the prospect of accession by France and China rather remote, since neither had yet joined either the PTBT or the NPT. Edmonds, 1994, p 378.

⁷¹ Ibid. p 379.

⁷² April Carter, *Success and Failure in Arms Control Negotiations*, (Oxford: Oxford University Press/SIPRI, 1989) pp 86-91.

⁷³ Quoted in Edmonds, 1994, p 379. As a consequence, the US chief negotiator, Paul Warnke, resigned and was replaced by Herbert York, one of Eisenhower’s original PSAC scientists and a former director of the Livermore nuclear weapons laboratory.

⁷⁴ Margaret Thatcher embarked on modernising the UK’s nuclear forces, taking the decision to replace Polaris by the more powerful Trident nuclear system, capable of carrying multiple independently targeted re-entry vehicles (MIRV) for which Britain would need to design – and also test – its own warheads. Despite a further decision to upgrade from Trident I (C4) to Trident II (D5), evidence suggests that the British warheads would be very similar to the American W76 warheads originally designed for the US Trident I fleet, since the UK would lease the missiles for its Trident nuclear submarines from the United States. See Robert S. Norris, Andrew S. Burrows and Richard W. Fieldhouse, *British, French and Chinese Nuclear Weapons*, Nuclear Weapons Databook vol. V, (Boulder CO, Westview Press/Natural Resources Defense Council Inc, 1994) pp 117-120.

⁷⁵ This controversial argument was not merely a tactic: genuinely believed by some of its proponents, it rested on the differences between the Soviet and American systems of manufacture. See Greb, 1988, p 108.

⁷⁶ See Norris Bradbury, J. Carson Mark and Richard Garwin, communication to President Jimmy Carter, August 15, 1978, reproduced in *Effects of a Comprehensive Test Ban Treaty on US National Security Interests*, Hearing before the Committee on Armed Services, Intelligence and Military Application of Nuclear Energy Subcommittee, US House of Representatives, 95th Congress (Washington DC: US Government Printing Office, 1978) pp 181-182.

⁷⁷ Edmonds also quotes an illuminating observation by Herb York on the British nuclear scientists’ pressure for continued testing: “Considered in the context of British military preparedness, the people

at the Ministry of Defence and the Atomic Weapons Research Establishment did indeed need more tests to achieve their objectives. Considered in the larger context of international security as a whole, the world – including Britain – needed to move away from its heavy dependence on nuclear weapons. From the point of view of those in the nuclear establishment, the first set of considerations was compelling. From that of my new friends and colleagues in the Foreign Office, the second set was compelling. It was a microcosm of the situation in Washington.” See Edmonds, 1994, p 385.

⁷⁸ David Owen, British Foreign Secretary at the time, later complained: “The way in which some US and British Defence Military officials conspired to thwart the [comprehensive test ban] agreement defied belief”, from J. O’Connor Howe (ed.), *Armed Peace: The Search for World Security* (London: Macmillan 1984), p 4, quoted in Edmonds, 1994, p 388 (note 3).

⁷⁹ Henry Kissinger, *Years of Upheaval* (London: Weidenfelt & Nicholson and Michael Joseph, 1982), p 1166.

⁸⁰ In addition to his failure to achieve a CTBT, Carter’s presidency oversaw programmes to develop the M-X missiles and upgrade Trident submarine-launched nuclear weapons, although public protest ensured that the “neutron bomb” (enhanced radiation warhead intended for anti-tank weapons) was shelved. NATO’s decision to take up the US offer of the modernised intermediate nuclear missiles was taken in December 1979, on the grounds that the USSR had circumvented the spirit of the SALT agreements by upgrading its deployment of intermediate and shorter range nuclear weapons. These missiles, scheduled for deployment in Belgium, Britain, Italy, The Netherlands and West Germany, were intended to counter the Soviet Union’s new, improved intermediate-range SS20s, which were beginning to supplant the much older SS-4s and SS-5s. NATO coupled the plans for deploying the most modern US intermediate nuclear forces in Europe with calls for arms control negotiations, a strategy dubbed ‘dual track’. The dual track strategy had its antecedents in the deploy-negotiate bargaining tactic credited by some with bringing the Soviet Union into the SALT/ABM agreements in the 1970s. Among the numerous factors that contributed to the success of SALT I and the relative failure of SALT II, it must be noted that the Nixon Administration credited the US Safeguard programme, combined with the Soviet Union’s fear of US superiority, especially in anti-missile technology, with creating the greatest incentive and leverage on the Soviet Union to negotiate SALT I. This perception feeds into the paradox that the bargaining politics associated with arms control may be used by some governments to feed the arms race, a view of particular salience when considering the posturing surrounding the deployment of intermediate nuclear forces in Europe in the early 1980s. See Carter, 1989, pp 137-168. Coral Bell noted that in foreign policy, the contrast between the Carter and Reagan presidencies lay more in what the two presidents *said* than in what they actually *did*. Coral Bell, “From Carter to Reagan” in Hyland, 1987, pp 57-77, especially p 63.

⁸¹ The doctrine of mutual assured destruction (MAD) was disliked by both conservative military strategists and anti-nuclear movements in civil society. Flexible response doctrine, which developed by way of Schlesinger’s Counterforce Doctrine (1974), offered a basis for shifting from reliance on mutual destruction. Carter’s Defense Secretary, Harold Brown, promoted a “countervailing” strategy, based on limiting the Soviet Union’s options. James Schlesinger, US Secretary of Defense 1973-75, pushed forward with a doctrine of flexible options that went beyond Robert McNamara’s critique of mutual assured destruction. Schlesinger wanted the US to have as wide a range of nuclear options as possible, with emphasis on the development of weapons designed for smaller, counter-force strikes, rather than the massive ‘city-busting’ weapons then underpinning deterrence doctrine. Lawrence Freedman, *The Evolution of Nuclear Strategy*, second edition, (London: Macmillan Press Ltd, 1989).

⁸² See Calvocoressi, 1991, pp 49-52.

⁸³ It was, for example, considered possible to limit nuclear use to the territory of allies, exempting the “homeland” territories of the superpowers. Freedman, 1989, pp 406-424.

⁸⁴ According to the zero option, NATO would forgo the planned deployment of Cruise and Pershing missiles in Europe if the Soviet Union removed all its INF missiles (the older SS-4s and SS-5s as well as the modern SS-20s) not only from the areas adjacent to Europe, but also from its Asian territory. Rejecting the zero option as such, General Secretary Brezhnev proposed a bilateral freeze on INF missiles in Europe, but that was rejected by Washington. Calvocoressi argues that the zero option was constructed to be impossible for the Soviets to accept. Calvocoressi, 1991, p 52. Freedman notes that the zero option was not just “a cynical political move designed to wrong-foot both the Soviet Union and the disarmament movement”, but reflected a European view that the Cruise and Pershing II missiles were actually unnecessary. Freedman, 1989, pp 418.

⁸⁵ SDI was reportedly a consequence of Reagan’s deep dismay after his presidential briefing on the SIOP (Single Integrated Operations Plan), which identifies targets for nuclear weapon use. See Freedman, 1989, pp 414.

⁸⁶ McGeorge Bundy, George F. Kennan, Robert S. McNamara, and Gerard Smith, "The President's Choice: Star Wars or Arms Control", in Hyland, 1987, pp 165-179.

⁸⁷ Freedman, 1989, pp 416.

⁸⁸ Ibid. pp 419.

⁸⁹ In Germany, one of the peace movement's roots was in church organisations, reinvigorated politically by the post World War II emphasis on the Lutheran imperative of conscience and dissent. Another was with the trade unions and socialist left. A third constituency, which grew into the Green Party, formed in the late 1970s in an attempt to overcome the disillusionment many felt with the fragmented, male-dominated, 'radical' left and to integrate the adversarial single issue politics of previous decades into a more coherent political movement for social and international change. The Greens rode to prominence on the wave of anti-nuclear feeling in the early 1980s, attracting some 5-10 percent of public support in Germany. In addition to mobilising opposition to the policies and deployments of NATO, the Greens, independent women's groups, END and Western churches made strong efforts to build links with dissidents on the Eastern side of the Berlin Wall. A further noted example was the Women's Peace Camp at Greenham Common, the first US Airforce base scheduled to receive Cruise missiles, but peace camps arose at many nuclear bases throughout Europe. Academics and activists developed greater links across Western and Eastern Europe, through groups such as European Nuclear Disarmament (END). European and Scandinavian women took the lead in a new approach to grassroots campaigning and networking across borders, with marches and train journeys traversing from West to East Europe, raising awareness of the risks and alternatives to nuclear war in the towns and communities along their routes. In some ways the early 1980s mirrored the late 1950s/early 1960s: as the Reagan-Thatcher axis sought to recreate an Atlanticist consensus and 'special-relationship', there was also a sudden upsurge in anti-nuclear protest in Europe and America, the most significant since atmospheric nuclear testing went underground in 1963. See, for example, See Diana Johnstone, *The Politics of Euromissiles*, (London: Verso, 1984) pp 33-78; and Mary Kaldor and Dan Smith (eds.), *Disarming Europe*, (London: The Merlin Press, 1982).

⁹⁰ Where the European movements called for nuclear disarmament, the US movement coalesced around the demand for a freeze on the production and testing of nuclear weapons, as represented by Randall Forsberg's "Call to Halt the Nuclear Arms Race", issued in April 1980. The Freeze Movement organised large demonstrations in Washington and other cities, but also worked with legislators 'inside the Beltway', only narrowly failing to have 'freeze' legislation passed through Congress. When Greenham women took a legal case to the New York courts in November 1983, seeking an injunction to prevent the deployment of cruise missiles, they were joined by two Congressmen, Ron Dellums and Ted Weiss, arguing that the Constitutional requirement of Congressional approval on any decision to go to war would be nullified by nuclear first use. Though the US movement played little role in combating the 'Euromissiles', as Cruise and Pershing were known to Americans, it took on SDI and the MX missile. Through public and political mobilisation aimed at Congressional denial of funds to the programme, Freeze advocates were influential in the cancellation of the MX missiles, while the arms control organisations contributed to the discrediting of the Star Wars programmes through effective use of technical, strategic and financial analyses. The MX programme, which Carter had surprised many by backing, may have been the price he paid to buy off the SALT opponents in time to get SALT II signed, so there was a certain irony that as SALT's main critics came to power in the Reagan administration, they saw the MX cancelled by a money-conscious Congress responsive to strengthening anti-nuclear concerns across the public spectrum.

⁹¹ When Reagan formally abandoned the tripartite talks, he had taken up the TTBT and PNET, expressing a desire to renegotiate the verification terms of these two bilateral treaties. John Edmonds noted that Moscow condemned this as "no more than a pretext for sabotaging the CTB negotiations", while *Time Magazine* reasoned that "the Administration wants to keep on testing America's nuclear warheads". The United States, supported by Britain, blocked all attempts to work on a test ban at the Conference on Disarmament, which since 1978 had put the CTBT at the top of its agenda. See Edmonds, 1994, p 380.

⁹² Prior to the sinking of the Rainbow Warrior, Greenpeace had directed attention at the human cost of nuclear testing by evacuating (at their request) Rongelap islanders, victims of 1950s atmospheric testing in the Marshall Islands, to a safer, less contaminated site. Afterwards, to raise attention in Europe, Greenpeace flew a hot air balloon over East and West Berlin, demanding a halt to nuclear testing. Greenpeace, which had started in Canada in 1971 as (according to some of its employees) a "boys' sailing club with a conscience", was one of the few organisations to maintain a focus against nuclear testing during the 1970s and 1980s. It had an early success when in 1971 it successfully roused public opposition to US proposals to conduct nuclear testing at Amchitka, an island bird sanctuary in

the Aleutians, off the coast of Alaska. Two years later, as Australia and New Zealand were taking France to the International Court of Justice, seeking a halt to French testing on grounds of environmental damage from radioactive fallout on their territory, using the “polluter pays” principle, Greenpeace sailors challenged the exclusion zone placed around the French nuclear test sites in the South Pacific. They were arrested and beaten up by French commandos, but managed to send pictures around the world. Simultaneously, Tahitian campaigners for independence gained high profile support from a group of influential French writers and politicians who organised the *Bataillon de la Paix* (Peace Battalion) to oppose nuclear testing and demand a debate on French nuclear policy. The specific point put to the ICJ was never adjudicated: France, which tried to have the cases thrown out, took the decision to cease atmospheric testing when the ICJ decided to proceed. The Court by majority vote on December 20, 1974, discontinued the cases on the grounds that they were “without object” since France had announced the termination of its atmospheric testing programme. While formally defying the World Court and attempting to brazen out the bad international publicity arising from their actions towards Tahiti-Polynesia and Greenpeace, France effectively conceded, and announced to the UN General Assembly in November 1973 that it would move its testing programme underground. This initiative can be regarded as an early example of the pincer approach, combining legal/diplomatic/legislative initiatives with public awareness/direct action campaigning in order to corner a reluctant government into complying with the objective, in this case an end to atmospheric tests in the Pacific. However, once French testing lost its visibility by going underground, public concern fell away, making it harder for organisations such as Greenpeace to sustain their support for the test ban’s disarmament objectives. See Michael Szabo, *Making Waves: The Greenpeace New Zealand Story* (Auckland: Reed Books, 1992), pp 28-35 and pp 109-143.

⁹³ The President of the Conference, Ambassador Mohammed Shaker of Egypt, managed to bypass Greenpeace’s strategy with the unusual but effective tactic of obtaining consensus for a compromise document that reflected views rather than enshrining actual agreements.

⁹⁴ Where PGA was worldwide, and worked particularly with nonaligned governments, IPPNW had been founded by American and Russian physicians at the height of the Euromissile crisis, in an attempt to bring the leaders of their respective governments to their senses. IPPNW’s authority rested on the physicians’ scientific and medical assessment of nuclear testing and the effects of the use of nuclear weapons, nuclear war and nuclear winter. They also conveyed moral authority, derived from the traditional respect that doctors command and from their bilateral efforts to transcend the cold war political culture and appeal to the common cause of humankind’s survival, a point emphasised when they were awarded the Nobel Peace Prize in 1985. Nevertheless, IPPNW’s campaign strategies were often more public-movement oriented than elite.

⁹⁵ The scientists and advocates who became involved in the joint verification project had a range of motives. From the US side, some saw it as a way to undermine the technical arguments used to mask political opposition to the CTBT; Thomas Cochran, a prime mover from NRDC, together with Frank von Hippel of the Federation of American Scientists, viewed the project as a way of confronting the inconsistencies in US and Soviet approaches to verification and to show the effectiveness of verification capabilities; others were primarily interested in the scientific opportunity enabling civilian seismologists to test new developments in equipment, data interpretation and measuring assumptions; some, such as NRDC lawyer Jacob Scherr, saw the project in terms of confidence building and challenging enemy perceptions. The driving force from the Soviet side, Evgeny Velikhov, vice president of the Soviet Academy of Sciences, believed the joint verification project could demonstrate the sincerity of Soviet disarmament proposals and have impact on the domestic American debate by showing Soviet openness and cooperation. This summary of the NRDC-SAS independent joint verification experiments derives primarily from Gallagher, 1999, pp 196-205.

⁹⁶ Though noting that “the NRDC-SAS joint monitoring project was the most innovative move in the politics of test ban verification [but] it failed to have an immediate impact on US policy...” Gallagher quotes one of Richard Perle’s assistants as admitting that NRDC “wanted to prove that a CTB is verifiable, while we’d made verification into the main public objection to a CTB”. Gallagher, 1999, pp 200-204.

⁹⁷ The *Washington Post*, for example, carried this assessment: “No more could governments pretend that a [CTBT] would be unverifiable...NRDC has given hope ... by showing that determined private citizens can lead even superpower governments out of the deadly traps they fashion for themselves.” Robert Park, “Bold Plan”, *Washington Post*, January 22, 1989, quoted in Gallagher, 1999, p 203. After the INF Treaty was signed, the United States and Soviet Union agreed to conduct official Joint Verification Experiments (JVE), using hydrodynamic methods and seismology.

⁹⁸ Suleimenov launched his campaign using a televised literary award to condemn the radioactive contamination from the nuclear 'Polygon' and call on the viewers to march to the centre of Almaty. His spontaneous demonstration was joined by tens of thousands of Kazakhs. As subsequent events have shown, he also had political ambitions and saw the testing issue as a way to mobilise Kazakh nationalism, using raised awareness of the health and environmental damage from nuclear testing to foster outrage and fuel opposition to the Soviet military presence and political system. Author's conversation with Suleimenov's aide, St. Petersburg, June 24, 1999.

⁹⁹ Much of this section is derived from contemporaneous notes of meetings between the author and members of the Nevada-Semipalatinsk Movement. I participated in the 1990 Citizen's Congress. See also Peter Zheutlin, "Nuclear victims of the world unite", *The Bulletin of the Atomic Scientists* (September, 1990); "Testing decision on Semipalatinsk by Kazakhstan", *Soviet Weekly*, January 10, 1991; and Vladimir Iakimets and Olzhas Suleimenov, "New tests mean new nukes", *The Bulletin of the Atomic Scientists* (October 1992).

¹⁰⁰ As already noted, Australia and New Zealand initiated a case against France in the International Court of Justice in 1973, citing environmental damage and the precautionary principle, but also arguing that the PTBT prohibition on atmospheric testing had become an established norm with legal force equivalent to common law, regardless of whether France had formally acceded to the treaty. I am grateful to Nicholas Sims for clarifying this point for me. As a consequence of such pressure, France ceased conducting atmospheric nuclear tests in 1974. China, which has also not acceded to the PTBT, halted atmospheric testing in 1980.

¹⁰¹ The relationship between revulsion against nuclear weapons and opposition to nuclear testing has not been adequately explored. Nuclear weapons were not always stigmatised as uniquely horrific and qualitatively different from other kinds of weapons capable of killing large numbers of people. Initially, governments and militaries regarded nuclear weapons as just another, albeit extremely powerful weapon to consider for their arsenals. As the US discussion of the possible use of nuclear weapons in Korea and against China in the 1950s suggests, nuclear weapons and their use were not then imbued with the unique moral taboo and political attributes that are now viewed as underpinning deterrence theory. The change came about in the mid-1950s, simultaneous with the mobilisation of public movements against nuclear testing after the Bravo test in 1954. Further study would be needed to assess whether this was synchronicity at work or whether there was a more direct relation between the acceleration of opposition to the radioactive damage and fallout from atmospheric tests after 1954 and the progressive stigmatisation of nuclear weapon possession and use. When nuclear testing went underground after the PTBT, it was very difficult to sustain civil society interest in banning nuclear weapons, although by this time the taboo on use had become embedded, perhaps as a result of emotions stirred by the awful proximity of nuclear war during the Cuban Missile Crisis. See, for example, Prawitz, 1995, pp 5-12.

¹⁰² The legal arguments have principally derived from the NPT. Since July 1996, the International Court of Justice Advisory Opinion on the use or threat of use of nuclear weapons, which originated in an NGO initiative and campaign lasting several years, has strengthened the legal basis for arguments against the deployment and use of nuclear weapons. Although the Advisory Opinion of the Court was ambiguous and equivocal in a number of respects, it has been used to bolster calls from NNWS and NGOs for the prohibition of nuclear weapons. The International Association of Lawyers Against Nuclear Arms (IALANA), the International Peace Bureau (IPB) and the International Physicians for the Prevention of Nuclear War (IPPNW), *The World Court Project on Nuclear Weapons and International Law*, (Northampton MA: Aletheia Press, 1993), and *International Court of Justice Reports 1996*, p 225. [Reported for July 8, 1996, General List No. 95]. The full decision, documentation and dissenting decisions also formed the Annex to *Advisory Opinion of the International Court of Justice on the legality of the threat or use of nuclear weapons*, Note by the Secretary-General, United Nations General Assembly A/51/218, October 15, 1996. See also: Opinion of Judge C. G. Weeramantry in the International Court of Justice, "The Illegality of Nuclear Weapons", (ICJ Reports, 1996) pp 429-555.

¹⁰³ Freedman noted Soviet ambivalence towards the new peace movements, whose demands in many ways "required more of the Soviet Union than the United States", though that did not protect them from conservative and government smears portraying them as pro-Soviet. Freedman, 1989, pp 401. Certainly, the German peace movement, END and Greenham women made a conscious effort to hold all sides to the same standards, advocating the dissolution of both the Warsaw Pact and NATO, calling for the removal of Soviet as well as American and British nuclear weapons, and challenging the oppressive Soviet system in the name of women's rights, and political and intellectual freedom.

¹⁰⁴ The political intentionality of civil society is often downplayed. For example, Freedman acknowledged the impact of the peace movements in “encouraging moves to ease the East-West confrontation through arms control, and in illuminating many of the problems associated with the logic of nuclear deterrence”, but characterised these as “indirect influences”. Freedman, 1989, p 402. In another example, Philip Bobbitt wrote of the widespread disillusionment with strategic deterrence in the 1980s: “This disenchantment was by no means confined to uninformed national publics who felt threatened by menacing technologies, buffeted by international political crises, and impressed either by apocalyptic claims or by well-advertised panaceas. National security elites also felt a disillusionment...” Philip Bobbitt, “Assessing Alternative Nuclear Strategies”, in Bobbitt, Freedman and Treverton, 1989, p 428.

¹⁰⁵ Knopf also argues that alliance politics within NATO added a third dimension to the conventionally understood two level domestic/international policy interaction. Jeffrey W. Knopf, “Beyond two-level games: domestic-international interaction in the intermediate-range nuclear forces negotiation”, *International Organization* 47:4 (1993) pp 599-628.

Chapter Four

Bringing States to the Negotiating Table: Civil Society and the Construction of Political Will

On October 2, 1992, President George Bush signed into law a bill mandating a nine-month moratorium on US nuclear tests and requiring the government to seek to conclude a comprehensive test ban treaty by September 1996. Undertaken in the teeth of opposition from President Bush and Defense Secretary Dick Cheney, the US moratorium was “*a fascinating story of Senate politics and procedures*”, enabled by an extraordinary alignment of forces and driven by civil society strategists and activists.¹ The US moratorium, which joined a moratorium on French nuclear testing undertaken by President François Mitterrand in April 1992 and a Russian moratorium initiated by Secretary-General Mikhail Gorbachev in October 1991, paved the way for the UN General Assembly’s annual CTBT resolution to be adopted without a vote for the first time.² The consensus resolution served as a multilateral instruction to the Conference on Disarmament to negotiate a test ban treaty. The CD agreed a mandate to negotiate in August 1993 and began negotiating in earnest in January 1994.

By mandating a pause in testing and setting a target date for the CTBT, the moratorium that President Bush signed played an important, arguably a causal role in bringing the parties to the formal negotiating table 16 months later. For realist regime theorists, this sequence of events would have been initiated because the hegemonic power, the United States, adapted to the post cold war strategic environment by downgrading its reliance on nuclear weapons. As part of its nuclear policy shift, the United States decided that its security interests would now be served by a multilaterally negotiated nuclear test ban, and so took appropriate measures to ensure that the issue was given priority and prominence on the international arms control agenda. This explanation looks good but is not right. Not only did the president and his administration³ remain adamant opponents of the CTBT in concept and practice, but influential Republicans in the US Senate manoeuvred to prevent the treaty’s ratification after 1996. Moreover, Bush’s son, on gaining the presidency in 2001, has reversed the logic and reinstituted traditional Republican opposition to the test ban.

To explain what shaped and drove the US policy shift, we have to look beyond the confines of realism.

Even as he signed, George Bush declared that the provision limiting US nuclear tests was “highly objectionable” and complained that it “unwisely restrict[ed]” tests necessary “to maintain a safe and reliable nuclear deterrent”.⁴ Bush’s Defence Secretary, Dick Cheney, and his National Security Advisor, Brent Scowcroft, had actively lobbied against the moratorium. Though agreeing in July 1992 to limit the annual number of US tests to six, the administration had made no effort to reconsider the opposition to a CTBT cemented by the Reagan administration when it formally withdrew from the trilateral CTB talks in 1982.⁵ Their opposition to a CTBT was maintained despite the post cold war changes in the strategic environment and the French and Russian moratoria. Britain, which had for three decades conducted its nuclear tests in cooperation with the US Department of Energy at the test site in Nevada, also made clear its opposition to the moratorium.⁶ Earlier, at the Fourth NPT Review Conference in 1990, the United States, supported by Britain until the very last minute, was willing to see the Conference collapse without a Final Document rather than agree to a one-sentence commitment to negotiate a CTBT.

The US moratorium was a pivotal moment in moving the world towards CTBT negotiations. But far from reflecting a change in government policy or posture, the moratorium was actually forced on a very reluctant president by the legislative action of test ban advocates in the US Senate and House, who had attached amendments for a nine month moratorium to the Fiscal Year (FY) 1993 Energy and Water Development Appropriations Act.⁷ As will be discussed below, this legislative action was to a large extent designed and organised by pro-CTBT pressure groups. In seeking to understand how it came about, Chapter 4 focuses on the civil society drivers and shapers that brought the major parties to the CTBT negotiating table.

Pre negotiations

In general, by the time arms control negotiations formally open, much has already been decided: the parties and forum, agenda, mandate, rules of procedure and so on. Even before these practical questions are negotiated, the principal parties have to

come to some kind of common understanding that there is a problem that cannot be resolved unilaterally, by means of national action. This diagnostic and bridge-building period of transition from ignorance, low salience or conflict about a problem to willingness to negotiate may either be viewed as the first stage of negotiations or as a distinct phase prior to the actual negotiations, that is, “prenegotiations”.⁸

Theories of prenegotiations, defined by William Zartman as a “purposive period of transition that enables parties to move from conflicting perceptions and behaviours (unilateral attempts at solutions) to cooperative perceptions and behaviours”⁹ have tended to focus primarily on governmental and intergovernmental processes. Theorists have identified different phases of prenegotiations and negotiations. Zartman, for example, focused on three: identification and diagnosis of a problem; consideration of options; and commitment to negotiate.¹⁰ Brian Tomlin expanded this to five: problem identification; the search for options; commitment to negotiate made by at least one party, marking the shift from “whether to negotiate to what will be negotiated”; communication and discussion, principally to determine the structure, boundaries, participation and agenda; and, finally, the agreement to negotiate.¹¹ As Janice Stein pointed out, however, the sequencing of prenegotiations is not fixed, but context-dependent.¹²

In the case of the CTBT, the standard approaches for considering prenegotiations are of limited usefulness. As outlined in Chapter 3, the identification and diagnosis of the problem – framed in disarmament, health and environmental terms – dates back to the 1950s. There then followed some four decades, during which the NWS, especially the United States and Soviet Union, played political football with the idea of a CTBT, while civil society actors and non nuclear weapon states continued to push for a treaty, at times appearing to get one or other of the main protagonists to commit to negotiations. Negotiations framed in terms of a CTB objective were undertaken on at least three occasions, but only the last, from 1994-1996, was able to finalise a treaty text that banned nuclear tests comprehensively. The first set of negotiations resulted in the Partial Test Ban Treaty and the second in the aborted tripartite testing talks of 1977-1980. For the CTBT, therefore, the concept of prenegotiations must either be elongated beyond current theoretical parameters, or adapted. Moreover, the majority of analyses on negotiations and prenegotiations emphasise institutional processes and

bargaining. They miss a crucial component: the role played by independent experts and nongovernmental actors in resetting the agenda, reframing the issues and norms, coordinating actions among non nuclear weapon states, and mobilising public opinion to capture the attention of political decisionmakers.

Since the US adoption of the testing moratorium was an important factor in the events leading up to the CTBT negotiations, it is important to ask what caused US Senators and Congressional Representatives to take up the issue of a nuclear test ban in the early 1990s? How and why did they force the moratorium through despite Republican attempts to trade it away for other benefits? The French moratorium, which took the world by surprise, gave impetus and encouragement to the advocates of a US moratorium. But what had induced Mitterrand to initiate France's first ever moratorium since French testing began in 1960? Mitterrand, who had presided over dozens of nuclear tests in the South Pacific, for years ignoring the protests of Australia, New Zealand, Japan and the Pacific Island Peoples, had brazened it out when French Secret Service agents were exposed as responsible for the July 1985 bombing of the *Rainbow Warrior*. Moreover, as discussed in Chapters 5 and 6, France was by no means an enthusiastic negotiator during the early stages of the CTBT negotiations, suggesting some level of policy conflict or confusion between the moratorium decision and its consequences. The French moratorium itself followed on the heels of the Russian moratorium. Secretary-General Gorbachev had initiated a moratorium in 1985, which had lasted 19 months without any reciprocal action by any of the other NWS. Why did he try again in 1990? What were the shapers that brought about these three moratorium decisions, and how were the moratoria related to wider policy objectives?

Putting Testing Back on the Agenda

The priority for test ban advocates in the early 1990s was to ratchet up public and political interest in a nuclear test ban in order to exert pressure on the nuclear testing states. The period of 1990-1991 was characterised by the interplay of three diplomatic and direct action strategies involving the nonaligned NNWS and NGOs: i) utilising the political commitment to a CTBT enshrined in the NPT to exert pressure through the Fourth NPT Review Conference, spearheaded by Mexico, with support from several nonaligned countries and NGOs, including Greenpeace, PGA and

IPPNW; ii) direct action, mostly carried out by Greenpeace at the major nuclear test sites and symbolic locations in the NWS; and iii) convening an Amendment Conference to the PTBT (an initiative of PGA), in partnership with key nonaligned countries, notably Mexico, Indonesia, Peru, Sri Lanka, and Venezuela.¹³

A CTB Warning Shot Across the NPT Bow

Updating the strategy pushed by Greenpeace in 1985, a number of nonaligned states, led by Mexico, refused to accept any final document of the 1990 NPT Review Conference that did not contain a clear commitment by the NWS to negotiate a CTBT. Russia supported this, but with all other issues agreed, Britain and the United States held out against the CTBT. The Conference went down to the wire in the early hours of September 15. The Conference President, Oswaldo de Rivero of Peru, stopped the clock, hoping private negotiations among a group of 16 parties would reach agreement.¹⁴ The Chair of the drafting committee, Carl-Magnus Hyltenius of Sweden obtained widespread support for a compromise text. The United States insisted on adding a further paragraph that, in effect, nullified the compromise text's call for early bilateral and multilateral action. This asserted the primacy of "step-by-step negotiations" between the two superpowers on intermediate limitations on testing "leading to the ultimate objective of the complete cessation of nuclear testing as part of an effective disarmament process." This time, by contrast with what had occurred in 1985, Mexico, led by its CD ambassador Miguel Márín Bosch, resisted all pressure to concede beyond the compromises already contained in the President's paragraph. Even Britain caved in and accepted the compromise text during the early hours of the morning, but the United States held out.¹⁵ With both the United States and Mexico refusing to give in, the Review Conference collapsed, amid mutual recrimination. The nonaligned strategy had been encouraged and strongly supported by test ban advocates among the NGOs attending the review conference, notably PGA and Greenpeace. This divided them from many nonproliferation/arms control NGOs, who criticised Mexico, arguing that its point had been made and Marín Bosch should have conceded to prevent the loss of hard-won agreements on safeguards, inspections and nuclear smuggling.¹⁶ As later transpired, however, Mexico's refusal to give in at the end sent a very important warning shot about the CTBT across the bows of Western diplomats who were already strategising for indefinite extension of the NPT in 1995.

Making the Test Sites Publicly Visible

After a few years of relative inactivity on nuclear issues following the events of 1985, Greenpeace got back into its stride in the late 1980s with a plan to highlight testing at Novaya Zemlya, Nevada and Moruroa¹⁷ and make the remote sites more visible as part of a strategy to raise public awareness and exert political pressure. The environmental organisation launched a converted trawler as the new *Rainbow Warrior*, pledging to resume its initiating high profile campaigning for a CTBT, together with a new campaign for “nuclear free seas”. Riding a popular crest of a wave and capitalising on growing public concern about protecting the environment, Greenpeace decided to avoid confrontations about national security and nuclear disarmament angle and to highlight instead the scale of the international environmental and human rights problems associated with nuclear testing. This strategy was particularly important for France, which exhibited the countervailing tendencies of a growing environmental consciousness combined with a general national consensus on nuclear defence policy.

Successive direct actions were planned at the US/British, Soviet and French sites.¹⁸ In October 1990, the *MV Greenpeace* and its crew were arrested by the KGB after landing four campaigners with radiation detectors on the North Island of Novaya Zemlya. After hiking to nearby test shafts, the campaigners measured extraordinarily high levels of environmental radioactivity before being arrested. The ship and its crew were detained for nearly a week, generating worldwide press coverage, during which Boris Yeltsin called on President Gorbachev to end nuclear testing. On October 18, 1990, shortly after the Greenpeace campaigners had been deported, the Soviet Union carried out its planned nuclear explosion at Novaya Zemlya. Because of the Greenpeace-generated interest, including publication of the contamination levels the crew had measured, the Soviet test was followed by a storm of criticism at the United Nations and in the international media. That turned out to be the last Soviet test. One year later, Gorbachev announced a unilateral moratorium.

A month later, in November 1990, Greenpeace put the spotlight on Anglo-American testing, with simultaneous actions in London and Nevada to draw attention to a

planned British nuclear test. In London, Greenpeace made the front pages of several UK tabloids and gained worldwide press coverage with an iconic photograph of climbers hanging above the Thames with a huge banner suspended from Tower Bridge that demanded “Stop UK Nuclear Tests”. At the same time, four activists, including three British women, hiked onto the Nevada Test Site. Hiking, camping and avoiding detection for three days, they turned up on military cameras at the ground zero site for the British test, codenamed Houston, forcing the explosion to be halted six minutes before detonation. They were eventually arrested and the test went ahead some hours later, but the action had caused significant publicity in Britain and embarrassment to the US and British authorities.¹⁹ As media coverage indicated that the majority of British people were not aware that nuclear testing was still being conducted by the MoD, other disarmament activists used the Greenpeace publicity to boost their anti-nuclear actions around Britain.

A month later Greenpeace returned to the French test site at Moruroa with the *Rainbow Warrior*. Having chosen to focus attention on the ‘soft’ issues of environmental contamination and human rights, where there was more hope of eroding French support for nuclear testing than a confrontation about the ‘*force de frappe*’, Greenpeace published a compilation of personal testimonies from Maohi witnesses and workers involved in the French nuclear testing programme in the South Pacific, with information on accidents, health effects and environmental problems that appeared to be linked with the tests.²⁰ Film and data from a French cultural hero, Commander Jacques Cousteau, were employed to raise questions about the site’s fragility and present evidence suggesting that radioactive plutonium and caesium were already leaking into the surrounding oceans. With public fanfare, Greenpeace applied to the French government for permission to take samples “to quantify present and short to medium term releases of radioactivity from the underground nuclear explosions at Moruroa and Fangataufa”.²¹ When, as expected, their request was ignored, Greenpeace went ahead with its sampling mission as a form of nonviolent direct action, with media on board to record every move. As anticipated, members of the crew and some scientists were arrested for breaching the 12 mile exclusion zone, but managed to smuggle out some of their samples of lagoon water and fauna.²² The arrests and subsequent deportations received worldwide media coverage, with significant – and largely positive – reporting in France. Analysis of the samples

revealed radioactive contamination. Though the levels were not particularly significant, there were traces of plutonium – enough for Greenpeace to publish in September 1991 and challenge the French government to permit an independent international study of the Moruroa and Fangataufa test sites to determine the rate of failure of containment from the nuclear blasts. Vowing to keep taking scientists to Moruroa until nuclear testing was halted and a full and open study of the environmental situation could be undertaken, Greenpeace prepared to return the following year.²³

Parliamentarians and NGOs: the PTBT Amendment Conference

In January 1991, the PTBT Amendment Conference was held at the United Nations in New York over the strong opposition of the governments of Britain and the United States. This Conference, which took three years of civil society and NNWS partnership to convene, was the brainchild of PGA's coordinator, Aaron Tovish. Drawing on the provisions in the treaty's Article II.1, Tovish managed by August 1988 to persuade six states (Mexico, Indonesia, Peru, Sri Lanka, Yugoslavia and Venezuela) to table a proposal for amending the PTBT to cover all environments, which would have transformed the treaty into a CTBT. Over the next two years, PGA worked on gathering signatures from one third of the parties to the treaty, thereby obliging the three PTBT depositary governments, Britain, the United States and the Soviet Union, to convene a conference to consider the proposed amendment. This Conference was held from January 4 to 18, 1991, chaired by Ali Alatas, ambassador of Indonesia. In conjunction with it, Greenpeace and a Las Vegas-based NGO, American Peace Test, organised a conference in Las Vegas for information exchange and networking, followed by a mass trespass on the test site, resulting in 750 arrests, but not a lot of publicity.²⁴

Representatives of the key NGOs, including PGA, the Nevada-Semipalatinsk Movement, Greenpeace and IPPNW, addressed the delegates to the PTBT Amendment Conference, along with representatives of indigenous people affected by nuclear testing from the Pacific, Kazakh and Western Shoshone nations. The United States and Britain had made it clear that they would veto any amendment banning underground testing, so a compromise amendment was proposed, enabling Ali Alatas to keep the issue on the diplomatic agenda, with the possibility of reconvening the

PTBT Amendment Conference at some time in the future. Since the second amendment was procedural, it could not be vetoed, and was carried by 74 votes to 2 (Britain and the United States), with 19 abstentions (mainly NATO).

At the time, neither the demonstrations nor the Amendment Conference received much media coverage because of the imminence of the Gulf War.²⁵ However, the device of keeping the Conference potentially alive acted as an important lever which Alatas and his nonaligned colleagues wielded shrewdly over the coming 36 months.²⁶ Moreover, the NGOs used the strategy and Conference as an opportunity to present up-to-date arguments and research on the feasibility of a CTBT, including its verifiability. The amendment, for example, included a proposal for a verification protocol, which had been drawn up by the Verification Technology Information Centre (VERTIC), a London-based NGO that coordinated scientific and expert research and opinion on arms control and environmental verification issues.²⁷ Such information was an important resource for NNWS diplomats and officials in countering the verification pessimism of the nuclear weapon states during the next few years.

From Heightened Awareness to Moratoria

Greenpeace's strategic objectives, in carrying out high profile direct actions at the US/British, Soviet and French sites, were to make underground nuclear testing more visible, put the demand for a CTBT back on the public and political agenda, and ratchet up pressure on the NWS. While supporting the PGA initiative on amending the PTBT, Greenpeace placed less overt emphasis on strategic concerns or the nuclear arms race, instead seeking to raise public awareness by highlighting the health and environmental dangers of nuclear testing.²⁸ Though there were many other civil society pressure groups opposed to nuclear testing and weapons, Greenpeace's strength in the 1980s and early 1990s was its international reach, with campaigners in many countries, and its ability to coordinate large actions quickly, with high level technical resources, including ships and state-of-the-art communication. It was one of the first NGOs working on disarmament and environmental issues to play the media at its own game. They understood the importance of timing, constructed images and media friendly approaches, and were more adept than most at using personal stories and political messages.²⁹ Where Hampson and others have identified

that crisis or exogenous shock can play an important role in precipitating policy changes, Greenpeace was at the forefront among civil society actors in recognising that direct action and publicity could be used to generate a perception of crisis or to politicise a situation into a crisis for target audiences or policymakers. The cumulative effect of the actions of Greenpeace and others against nuclear testing during 1989-1991 fostered a sense of environmental crisis and urgency that played into the political concerns of a number of governments.

The first major breakthrough came on October 5, 1991, when President Gorbachev declared a moratorium on Soviet testing. The Soviet moratorium made virtue of necessity, because the growing power of the Kazakh nationalists and the Nevada-Semipalatinsk Movement had already effectively halted testing at Semipalatinsk. The announcement of a one year French moratorium on April 8, 1992 came as more of a surprise, not least to the French military and Atomic Energy Commission, who had already put the drilling platforms in place for the 1992 programme of tests at Moruroa.³⁰

Three levels of interacting civil society pressure appear to have contributed to President Mitterrand's decision. Most immediately, the March 1992 regional elections had gone badly for the Socialist Party and marked the first significant success for *les Verts*, the French Green Party, which garnered almost 15 percent of the vote. The Greens had listed a nuclear test ban high in their political platform of environmental priorities. They had also been instrumental in the January 1992 launch of a "European Campaign for a Moratorium on French Nuclear Tests in the Pacific" by a coalition of French ecologists and peace activists, members of the European Parliament, and the Protestant and Catholic Churches of France and other European countries.³¹ During the French election campaign, Greenpeace had published more information on radioactive leakage from Moruroa, and the *Rainbow Warrior* had returned in late 1991/early 1992 to take more samples at the Pacific test range. Since official permission for this sampling was again denied, Greenpeace was able to attract further international – and French – publicity as its boat was again blocked by the French military. Polls suggest that Greenpeace and others were successfully eroding public confidence in French statements about the environmental safety of its testing programme, thereby increasing pressure of the French government.³²

At the same time, Mitterrand was undoubtedly reassessing French policy after the cold war, as evidenced by the withdrawal of tactical nuclear weapons from the *Plateau d'Albion*, the cancellation of the *Hadès* programme, and the announcement on June 3, 1992 that France would join the NPT. In announcing the moratorium on nuclear testing, Prime Minister Pierre Bérégovoy also alluded to the necessity to stop the massive build up and stockpiling of nuclear weapons.³³ Was the moratorium a reflection of a desire to halt nuclear testing or a political manoeuvre designed to get the Greens off his back? Mitterrand's own statement just days after the moratorium was announced was revealing: "If the other nuclear powers are stubborn, France will have to continue to assure its defence. It will regret the lost opportunity. It will have done its duty."³⁴ This suggests that Mitterrand calculated that temporarily suspending the tests would allow France to take the moral high ground, address some of its problems at the Pacific test site, and meet a key objective of the environmentalists. In a political climate dominated by the Conservative Party in Britain and the Republicans in the United States, there was every reason to assume that the other governments would carry on testing. France could then resume when ready, with the moratorium conferring political gains with little or no military cost.

At the time, there were also grounds for believing that the Russian moratorium would not hold for long. A leaked memo dated February 27, 1992 revealed that Boris Yeltsin, who had taken over from Gorbachev at the end of 1991 as the head of the newly formed Russian Federation, was preparing to breach Gorbachev's moratorium and resume testing at Novaya Zemlya. After NGOs, including Greenpeace, IPPNW, the Nevada-Semipalatinsk Movement and a growing number of Russian environmentalists, protested and turned up the heat, Yeltsin backed down, and in the end declared that Russia would extend Gorbachev's moratorium.³⁵ Whatever the original intentions of Mitterrand and Yeltsin, they became locked into their respective moratoria when President Bush in October 1992 signed a bill mandating the United States to adhere to a nine month moratorium and pursue negotiations aimed at completing a CTBT by September 30, 1996.

The US Moratorium: Legislative Strategy and Public Pressure

The impetus behind the moratorium came from Senator Mark Hatfield, a liberal Republican from Oregon who had co-sponsored the “Freeze” resolutions with Senator Edward Kennedy in the 1980s. He teamed up with a conservative Democrat, James Exon, who had reportedly been shocked by the devastation he saw during a visit to the Nevada Test Site in 1991. The French moratorium gave impetus to Hatfield’s initiative, enabling him to recruit 53 co-sponsors, the most important of whom was the Senate Majority Leader, George Mitchell. Meanwhile, the Bush administration tried to carry on business as usual, detonating a test on April 30, 1992, three weeks after the French moratorium was announced.

As civil society erupted with criticism and petitions, the House Majority Leader, Richard Gephardt, and a first term Representative, Mike Kopetski, responded by introducing the “Nuclear Testing Moratorium Bill” (HR 3636), which quickly gained 216 co-sponsors in support of a one year moratorium. Hatfield’s initial draft legislation was attached to the Senate Defense Authorization Bill for Fiscal Year (FY) 2003. Hatfield, Exon and Mitchell entered into negotiations to get conservative backers. Talks with Sam Nunn, the influential Chair of the Senate Armed Services Committee resulted in modifications to allow for a limited number of safety tests, and the White House successfully lobbied for language to allow the United States to resume testing if any other country conducted a test.³⁶ In a farsighted and shrewd parliamentary move, Hatfield duplicated the moratorium provision as an amendment to the Energy and Water Appropriations Bill. This proved vital, for in the House-Senate conference committee on the Defense Authorization Bill Nunn suddenly pulled back his support for the moratorium provision, which consequently fell. By contrast, Hatfield, the ranking member on the Senate Appropriations Committee, was able to ensure that the provision survived the Energy and Water Appropriations House-Senate Conference Committee. Cheney and Scowcroft lobbied the Senate, urging them to vote against the Hatfield-Exon-Mitchell Amendment, but in vain.³⁷

After a tough round of negotiations and trade-offs, amid intensive lobbying from ‘inside the Beltway’ arms controllers, a massive grassroots campaign of letter writing to Congressional representatives and op-eds in local papers, the test moratorium

amendment was passed by the Senate on September 13, 1992 by a margin of 55 to 40. On September 24, the House of Representatives adopted the same amendment by 224 to 151. Elsewhere in the Bill were 'pork barrel' provisions giving jobs and money to Republican regions that were important to George Bush in this election year. Of particular note was the \$4.5 billion supercollider project in the president's home state of Texas.³⁸ Without a line item veto, Bush had Hobson's choice of either signing the Bill with the moratorium or vetoing the whole package. Britain, dependent on the US test site, had no say, although the MoD, which had at least three further nuclear tests designed and planned, lobbied hard in Washington to prevent the moratorium. With his eyes on his domestic agenda and Texas pork, George Bush ignored British protests. Making clear that he did not support a test ban, he signed the Bill on October 2, 1992. The Hatfield-Exon-Mitchell Amendment mandated a 9-month moratorium, with the possibility of seeking approval for up to 15 tests before September 30, 1996 (of which Britain could conduct one per year (up to a maximum of three) if the president determined that it would be in US national interests).³⁹ Significantly, despite the French and Russian moratoria and evidence that pressure was mounting for a test ban, Bush took no steps to provide for a test-ban readiness programme. A triumph for legislative strategy, the moratorium was not expected to last.

From Moratoria to Negotiating Mandate

When Bill Clinton was elected president he was expected to support a CTBT, a measure which he had advocated as a presidential candidate.⁴⁰ Three important test-ban related issues came up for decision during his first year: proposals for a threshold of one kiloton, extension of the moratorium, and discussion of ways to limit the binding duration of any treaty.

In February 1993, Robert Bell, Director for Arms Control at the National Security Council, advocated that the CTBT should have a 1 kt threshold. He argued that "no-one was supporting continuation of the moratorium imposed by the Hatfield-Mitchell-Exon legislation after the expiration of the nine-month period in June 1993".⁴¹ Lake initiated a mid-level interagency review lasting several months, with a Principals' meeting involving senior officials scheduled for May 14. The British nuclear establishment and MoD, in close collaboration with their opposite numbers in the Pentagon and the US nuclear laboratories, mounted a well-orchestrated offensive

against the moratorium. Arms controllers in London and Washington responded with a bill sponsored by Representative Mike Kopetski aimed at making Britain pay the full costs of its testing, including the environmental clean-up.⁴²

At the first Principals' meeting of the US interagency process to consider whether to continue the moratorium, only Thomas Graham Jr., a senior official at the Arms Control and Disarmament Agency (ACDA), argued in favour. Ambassador Graham, who led US efforts to obtain indefinite extension of the NPT in 1995, argued that "the tests were not necessary and should not jeopardise NPT extension".⁴³ The newly appointed Secretary for Energy, Hazel O'Leary, surprised the other Principals by insisting on a postponement of the decision until she could receive full briefings from the nuclear laboratories and other interested parties connected with her department. O'Leary heard arguments for and against conducting the full 15 tests. The nuclear laboratory officials from Los Alamos, Sandia and Livermore were mostly in favour, and cited safety and reliability, test ban readiness, Anglo-American relations, and future ratification considerations.⁴⁴ Others, such as Frank von Hippel, who later became Clinton's science advisor, maintained that no further safety tests were needed, although he supported allowing hydronuclear experiments (HNE) up to 4 lbs (1.8 kg).⁴⁵ O'Leary concluded that, notwithstanding the desires of some in the nuclear establishment, further nuclear tests were not actually *needed* for stockpile safety and reliability. When the Principals reconvened in late May, they were divided: Secretary of Defense Les Aspin and Secretary of State Warren Christopher argued that a "deal" had been made in Congress to allow 15 tests; Graham and O'Leary pushed to extend the moratorium; and Colin Powell, head of the Joint Chiefs, sat on the fence.⁴⁶

During these few months in 1993, civil society had not been idle. When by April-May it looked as if the transgovernmental collaboration between US Pentagon and UK MoD opponents of the CTBT would be successful, NGOs on both sides of the Atlantic mobilised letter-writing campaigns to the President and Congressional representatives supporting the moratorium and opposing the 1 kt threshold idea. In particular, Washington arms controllers provided technical information and assisted the Senators at the forefront of the Nuclear Testing Moratorium legislation to organise almost 200 letters from their congressional colleagues. They obtained a poll

rating of 72 percent of US public opinion in favour of continuing the moratorium. Physicians for Social Responsibility (PSR, a US affiliate of IPPNW), Greenpeace and others put pro-CTBT ads into major US newspapers, including one that admonished a saxophone-playing Clinton: "Don't Blow it Bill".⁴⁷ In Britain, activists from the Test Ban Action Group (T-BAG), an unofficial network of anti-nuclear organisations and ex-peace-camp feminists, handed out anti-testing leaflets at stations and town centres. They also worked with Labour and Liberal Democrat MPs to highlight the MoD's lobbying activities against the moratorium in Washington and to put pressure on the government through parliamentary questions and early day motions (EDM). When the *Washington Post* published news of the US administration's internal debates on April 30, British and US civil society moved into overdrive, with letters to the Prime Minister and President from church leaders and dignitaries, a slew of newspaper editorials, and a barrage of information to Congressional representatives who, in turn, lobbied Clinton.⁴⁸

With the US interagency process unable to come to a clear decision, Clinton's National Security Advisor, Anthony Lake, consulted senior politicians, receiving their assurance that there would be Congressional support for extending the moratorium. On July 3, 1993, Clinton announced that the US moratorium would be extended, taking Britain with it. As noted above, his decision trapped Russia and France into their moratoria too.

Although Beijing never joined the moratoria, it was severely embarrassed in October 1993 when VERTIC successfully predicted the timing and location of China's next nuclear test. Using satellite imagery and seismic monitoring hooked up to a couple of laptop computers, VERTIC published details of the Chinese test within a few hours of its occurrence. The Chinese government initially tried to pass it off as an earthquake, but within 24 hours was forced into admitting the test, which gave rise to public and diplomatic condemnation around the world. VERTIC's coup had two positive outcomes. Occurring just as the UN met in New York for the First Committee, VERTIC's action showed how a small NGO could successfully detect and locate an underground test, giving reassurance and credibility to the concept of verifying a total test ban. Secondly, China began for the first time to announce its tests. From then until the CTBT was signed, China conducted about two tests per

year, but avoided similar embarrassment by releasing their own government announcements to the media.⁴⁹

Changing Minds and Policies: Evaluating Civil Society's Role

Pre negotiations literature refers to the usefulness of a 'bridge' or temporary suspension of conflict behaviour, such as a ceasefire, in bringing conflicting parties to the negotiating table.⁵⁰ To the extent that nuclear testing may be regarded as 'conflict behaviour', the moratoria provided such a bridge towards the CTBT. Using Zartman's words, taken collectively, the moratoria may be seen as a "temporary mechanism that provides for the change itself on a transitional and provisional basis" – in effect, a "downpayment on confidence".⁵¹

As noted earlier, evaluating the impact of civil society actions on security and arms control decisionmaking can be difficult.⁵² There may be vested interests in ignoring or downplaying the intentionality and influence of civil society actors, either because governments want to dishearten their opponents and discourage nongovernmental challenges to state authority, or because to admit that players without formal power may substantially shape state interests contradicts dominant theories of how the world works. For alternative political reasons, there may also be vested interests in inflating the role of pressure groups. As norms are shaped and embedded, governments themselves will adapt, adopt and internalise those norms, perceptions and arguments. Civil society is at its most successful when the norms or policies it has been advocating cease to appear controversial or challenging. Once a tipping point has been reached or norms have become embedded, political shifts or policy changes take on a quality of inevitability, generally obscuring the shaping role of nonstate actors. How, then, can the political influence of civil society be measured?

When seeking to assess the relevance of civil society strategies, the recollections of government officials can be useful indicators. In this regard, my interviews with ambassadors and the recently published memoirs of Ambassador Thomas Graham, who headed the US delegation to the NPT and participated in many of the interagency meetings on the CTBT, provide some evidence to corroborate several of the claims made in this chapter. Another, though less reliable, measure of civil society

effectiveness is its tangible output, such as media coverage and numbers of letters or calls to governments from members of the public or their parliamentary or congressional representatives. Such indicators may be the result of the mobilising work of NGOs and help to gauge levels of public concern. High levels of output, however, do not always translate into effective influence on outcome. Demonstrations, for example, can be useful in promoting local attention and fostering NGO links and enthusiasm, but to have any impact on national policy and decisionmaking, they usually need to be large, inspirational and well-timed. The PTBT Amendment Conference and Greenpeace's related activities, including mass arrests, could be viewed as successful examples of parliamentary and civil society mobilisation; marred, however, by infelicitous (but unforeseeable) timing, as the Gulf War started in January 1991, the PTBT Conference and related actions had very little direct impact on the decisions of the weapon states.⁵³

Another factor to take into consideration when evaluating the impact of civil society strategies and actions is that it may take time and interaction with other events or developments before the full effect is recognised. In addition, actions deemed invisible, ineffective or unsuccessful at the time may trigger or contribute to a cascade that over the longer term causes the desired policy change. For example, though the PTBT Amendment Conference appeared at the time to have been practically invisible, and Mexico provoked great hostility in some quarters for the part it played in the failure of the 1990 NPT Review Conference by refusing to give in over the CTBT, both these strategies were important in piling pressure on the NWS for a CTBT.

Caveats notwithstanding, some criteria need to be developed for assessing civil society strategies and impact. First, we can consider whether the target leaders or governments acted in accordance with civil society demands. If they did, did they have a pre-existing preference for the policy in question? If no, what factors changed the policy? Was there a sudden perception of crisis or urgency, and if so, were the causes exogenous (a nuclear accident, for example) or were there changes in how an issue came to be viewed? If the latter, had the change been stimulated by the dissemination of information, reframing of the issue or recasting of the implications in, for example, moral, environmental or security terms? Did the issue become

relevant in electoral politics, and if so, had civil society played a role in setting that agenda and putting it into the election arena?

In the French elections of early 1992 and the US elections of late 1992, nuclear testing was made an issue by the Greens and Democrats, respectively, in both cases with demonstrable pressure from civil society and parliamentarians or legislators. In the French case, there is no evidence that Mitterrand had any policy preference for a testing moratorium before the Greens received such a high showing in the March 1992 polls. On the contrary, despite being leader of the Socialist Party, Mitterrand, as president, had appeared unworried by years of international criticism over French testing.

In the United States, the Bush administration's antipathy towards the moratorium and a CTBT was well documented. The moratorium did not change the Republican view of the CTBT, but forced the policy change by means of the mobilisation of public opinion on the one hand and construction of a strategic partnership between epistemic actors, norm entrepreneurs and a few key congressional arms controllers in the United States. Together, these two approaches persuaded the Democrat majority in both Houses of Congress to exercise their "broad set of legitimate means to block, divert, or alter foreign policy initiatives"⁵⁴ and force the initial nine month moratorium and CTBT target date on an unwilling President Bush. The success of this legislative strategy was impressive, but by coercing opponents to accept the political change without changing the normative matrix may have contributed to the ideological campaign that some Republicans continued to wage against the CTBT, resulting in the US failure to ratify in 1999 and the virulent opposition shown to the treaty by the administration of George W. Bush after 2001.⁵⁵

With regard to the Soviet moratorium, Gorbachev had certainly been willing to undertake a moratorium from August 1985 to February 1987, but there is no evidence that he planned to declare another one in 1991, so soon after the earlier initiative had failed. Although the publicity harnessed by Greenpeace's action (and particularly the embarrassing allegations of high levels of radioactive contamination found at Novaya Zemlya) undoubtedly helped, the major credit for the testing moratorium belongs

with the shrewd mobilisation and strategies of the Kazakh Nevada-Semipalatinsk Movement, described in Chapter 3.⁵⁶

To sum up, this chapter argues that the two most significant political components of the prenegotiation period were the enacting of testing moratoria and the diplomatic pressure exerted through the increasingly time-urgent linkage between the NPT's extension decision and that treaty's commitment nearly 25 years earlier to a CTBT. In both cases, civil society played a crucial role using a mix of strategies to promote public awareness and concern and reframe the problem in environmental and security terms. The testing moratoria were essentially shaped by domestic decisionmaking. The dynamics in each case were different. Gorbachev made virtue out of a necessity dictated by the effectiveness of the Nevada-Semipalatinsk Movement's nationalist-environmentalist insistence on the closure of the Semipalatinsk test site (and the greater expense and poorer conditions of testing at Novaya Zemlya). Mitterrand sought to buy off a political challenge from the Green Party by dressing in more environmentally friendly clothes. And in the United States, a combination of public mobilisation and legislative strategies imposed the initial moratorium on a Republican president and enabled his Democratic successor to sustain it, despite strong pressure from both the British government and the Pentagon.

Once the United States had come out in favour of a CTBT, it pulled the rest of the NWS along. These observations accord with Hampson's analysis of the prenegotiation phase in cold war bilateral arms control, in which "US willingness to begin negotiations has been affected by the emergence of strong public and congressional pressures in support of arms control".⁵⁷ There is considerably less evidence in this case study to support Hampson's identification of "crisis or impending crisis"⁵⁸ as a trigger for negotiations. The only crisis-type trigger was the one deliberately manufactured by the NNWS and NGOs when they explicitly linked the achievement of a CTBT with the decision to extend the NPT in 1995. For this to work, transnational civil society pursued a strategy of working with the NNWS, while US NGOs exerted pressure in Washington, and diplomats such as Ambassador Graham ensured that wider nonproliferation considerations would be taken into account in interagency discussions on the CTBT and testing moratorium.

This chapter, which made the case that civil society actors played crucial roles in constructing the political conditions and will for the NWS to agree to commence CTBT negotiations, concludes the first part of the thesis. Having now provided a theoretical, historical and political context, it is time to consider the 1994-96 CTBT negotiations in detail.

Notes

¹ This observation was from Andy Johnson, legislative aide to Senator Exon, from an interview with Hugh Gusterson on December 4, 1997, quoted with permission from Hugh Gusterson, from draft chapters of a book in progress (probable title: *Simulating Armageddon*). See also Dunbar Lockwood "Nuclear Arms Control" in *SIPRI Yearbook 1993: World Armaments and Disarmament*, (Oxford: Oxford University Press, 1993), p 562.

² *Resolution on a Comprehensive Test Ban Treaty*, A/Res/47/47, adopted without a vote, December 9, 1992.

³ The term "administration" in relation to US politics refers to the President, his cabinet and executive branch, and should be distinguished from the legislative branch, comprising the Senate and House of Representatives. This is in contrast with countries such as Britain, where the government is formed from the party with a parliamentary majority.

⁴ George Bush, "Statement on Signing the Energy and Water Development Appropriations Act, 1993", P.L. 102-377, October 2, 1992. See Lockwood, 1993, p 562.

⁵ The trilateral talks were adjourned in November 1980, but the US did not formally withdraw until 1982. See Lockwood, 1993, p 561.

⁶ Ragnhild Ferm, "Nuclear Explosions 1945-92", in *SIPRI Yearbook 1993*, p 254. See excerpts from the August 1992 letter from Sir Robin Renwick (UK Ambassador to Washington) to Senate sponsors of test ban legislation, President Bush's January 19, 1993 letter to Les Aspin, Chair of the House Armed Services Committee, and President Clinton's February 12, 1993 letter to Senate Majority Leader George Mitchell, in "Nuclear Testing Issue: Three Letters" in *Arms Control Today*, (March 1993) p 29.

⁷ United States, *Congressional Record*, September 24, 1992, p H9424.

⁸ See Janice Gross Stein (ed.), *Getting to the Table: The Processes of International Prenegotiation*, (Baltimore MD and London: The Johns Hopkins University Press, 1989); Harold Saunders, "The pre-negotiation phase", in D.B. Bendahmane and J.W. McDonald (eds.), *International Negotiation: Art and Science* (Washington D.C.: Foreign Service Institute, Department of State, 1984); and I. William Zartman and Maureen R. Berman, *The Practical Negotiator*, (New Haven CT: Yale University Press 1982).

⁹ I. William Zartman, "Prenegotiation: Phases and Functions", in Stein, 1989, p 7.

¹⁰ Ibid.

¹¹ Brian W. Tomlin, "The Stages of Prenegotiation: The Decision to Negotiate North American Free Trade" in Stein, 1989, pp 18-44.

¹² Stein, 1989, pp 248-252.

¹³ Yugoslavia was among the six to take up the initiative in 1988, but as the Federation disintegrated into nationalism and war, it played a minimal role in the 1990s.

¹⁴ The special consultations were undertaken among the most active participants on the issue: the United States, Britain and the Soviet Union, Australia, Canada, New Zealand, Poland, Sweden, Indonesia, Iran, Mexico, Nigeria, Peru, Sri Lanka, Venezuela and Yugoslavia. See William Epstein, "Conference a qualified success", *The Bulletin of the Atomic Scientists* (December 1990).

¹⁵ According to a senior Iranian diplomat who was present during the intensive private negotiations in the final hours before the Fourth NPT Review Conference collapsed, the British delegation indicated at

around 4.00 am that it would accept the President's compromise language on the CTBT as accepted by the nonaligned states. The United States remained adamant on its additional paragraph, and so the Review Conference was allowed to fail. Author's conversation with Ali Asghar Soltanieh, Annecy, July 14, 2002. See also Epstein, 1990.

¹⁶ See, for example, John Simpson, "The 1990 Review Conference of the Nuclear Non-Proliferation Treaty," *The Round Table* (April 1991); Leonard S. Spector and Jacqueline R. Smith, "Deadlock damages nonproliferation", *The Bulletin of the Atomic Scientists* (December 1990); and, for an alternative view, Epstein, 1990.

¹⁷ I use the indigenous Maohi (Tahitian) spelling of Moruroa (which means "place of a great secret"), which is preferred in the Pacific region, rather than the French phonetic approximation "Mururoa", which has no meaning and is ascribed to a 19th century cartographers' mistake, but which is established usage by the French government and, through it, by many others.

¹⁸ Much less was known about China's test site at Lop Nor in Xinjiang Province. While I was at Greenpeace, I commissioned some research and satellite pictures, with a view to a possible future action or campaign. Using these and other images, Vipin Gupta conducted research that became the basis for a successful exposure of Chinese testing by VERTIC, as described later. See Vipin Gupta and Philip McNab, "Sleuthing from Home", *The Bulletin of the Atomic Scientists*, (December, 1993). See also endnote 51.

¹⁹ Importantly, in terms of reaching wider public opinion, both actions were covered extensively (and positively) in the British tabloid press, as well as the political dailies. One of the women, Lorna Richardson, was the niece of a prominent Labour MP, Jo Richardson, who recruited her fellow Shadow Cabinet members to put pressure on the UK Foreign and Commonwealth Office and US Department of Energy to have the test cancelled on safety grounds after US surveillance failed to locate the hikers. Examples of the press coverage included: "Protest Dive off Tower Bridge", *The Daily Express*, November 13, 1990; "Nuke Ban Daredevils Jump off Deep End, *The Daily Star*, November 13, 1990; Margaret Hall, "Greenham girl halts nuclear blast 7 minutes from death," *Today*, November 15, 1990; "N-bomb halted by women," *The Daily Mirror*, November 15, 1990; John Hiscock, "Nuclear test delayed after three women infiltrate site," *The Daily Telegraph*, November 15, 1990; Reuters, "Nuclear test goes ahead after arrests," *The Guardian*, November 15, 1990; "Nevada Blast is Delayed", *The Times*, November 15, 1990; Robert Lowes, "British Women Conquer NTS," *The Death Valley Gateway Gazette*, November 16-22, 1990. The Greenpeace/Greenham women's action also resulted in a pair of editorials for and against a nuclear test ban, published in a widely read USA tabloid as "Face-Off: Testing and Protesting", *USA Today*, November 16-18, 1990.

²⁰ *Testimonies: Witnesses of French nuclear testing in the South Pacific*, Greenpeace International, August 1990.

²¹ *Memorandum: Preliminary proposals for research on nuclear test sites in French Polynesia (Moruroa and Fangataufa)*, Greenpeace International, October 1990.

²² See Michael Szabo, *Making Waves: The Greenpeace New Zealand Story* (Auckland: Reed Books, 1992), pp 201-213.

²³ Sampling provided a motivation for entering the test site zone other than the publicity-seeking desire to have a confrontation with the French military. In this regard, Greenpeace campaigners set themselves up for a win-win strategy: if they got in and took samples they calculated that they would find enough radioactivity to justify their demand for an independent study; if they were arrested, the media would give coverage to the 'return' of the *Rainbow Warrior*. As it turned out, they were successful in doing both.

²⁴ "Britons held", *The Times*, January 7, 1991; "250 Nevada Test Site arrests", *The Morning Star*, January 7, 1991. The Nevada conference and actions, which took place over New Year, brought together many of the international activists and anti-testing NGOs, including Kazakhs from the Nevada-Semipalatinsk Movement and indigenous Maohi activists from Tahiti-Polynesia and funded their travel to New York to attend the PTBT Amendment Conference at the United Nations.

²⁵ See "Nuclear conference to debate total test ban", *The Independent*, January 8, 1991; "UN Conferees Press for Test Ban", *International Herald Tribune*, January 8, 1991; and "Testing time for treaty", *The Independent*, January 14, 1991.

²⁶ See William Epstein, "CTB: Two paths, one goal", *The Bulletin of the Atomic Scientists*, (October 1993).

²⁷ *Scientific and Technical Aspects of the Verification of a Comprehensive Test Ban Treaty*, (London: VERTIC, April 1990).

²⁸ It should be noted that at the same time, Greenpeace was running an active and well publicised Nuclear Free Seas campaign, which highlighted accident-prone nuclear weapons on ships and

submarines and blocked port visits by ships that refused to deny that they carried nuclear weapons. The campaign was mainly directed at the United States and Britain, which operated a policy of “neither confirm nor deny” (NCND) with regard to nuclear weapons on board vessels, but its coverage also stimulated wider anti-nuclear debate and pressure.

²⁹ Selected journalists, photographers and camera operators would accompany every Greenpeace action, ready to project professional quality footage around the world, thus encouraging the speedy publication of strong images and punchy soundbytes. Greenpeace also increased the probability of its coverage in key countries by ensuring that its teams of activists and campaign spokespeople came from a range of target nationalities, depending on the campaign.

³⁰ Bruno Barrillot, “French finesse nuclear future”, *The Bulletin of the Atomic Scientists* (September 1992). This point was also made by then US deputy head of ACDA, Thomas Graham, See Thomas Graham Jr., *Disarmament Sketches* (Seattle and London: University of Washington Press, 2002), p 238.

³¹ Though not directly involved by the time this initiative bore fruit, Greenpeace had been working with European MEPs, churches and other NGOs on resolutions and reports on nuclear testing in the European Parliament for the several years just prior to the European Campaign launch.

³² Barrillot notes that a poll in June 1992 indicated that nearly 60 percent of the French public opposed nuclear testing. Barrillot, 1992.

³³ Tom Collina, “French Halt Testing”, *The Bulletin of the Atomic Scientists* (June 1992).

³⁴ François Mitterrand, from a press conference on April 12, reported in *Le Monde*, April 14, 1992, as quoted in Barrillot, 1992.

³⁵ “Decree of the Russian Federation President on the Novaya Zemlya test site”, The Kremlin, Moscow, February 27, 1992, unofficial translation. See also “Russia urged by US to resume nuclear tests”, *North American News Report*, April 23, 1992. IPPNW received international publicity during this time for a 44 page report about nuclear-related problems, based on a two week mission to four former Soviet republics in late spring.

³⁶ Gusterson, *ibid*; and Collina, June 1992. See also George Perkovich, “Weapons complexes v democracy” *The Bulletin of the Atomic Scientists* (June 1992).

³⁷ John Isaacs, “Senate Surprises Itself”, *The Bulletin of the Atomic Scientists* (October 1992).

³⁸ Collina, December 1992. Gusterson also reports speculation that Bush signed after being assured by his aides that China would test, thereby allowing the United States to resume. China did not do so, however, until October 1993, by which time the Clinton administration decided not to react in kind. From Gusterson, book in progress.

³⁹ The Hatfield-Exon-Mitchell Amendment, sec 507 of the Energy and Water Appropriations Act for Fiscal Year 1993. See also the *UK Defence Committee Report, 1992-3*, House of Commons; “Congress seeks nuclear test ban”, *The Times*, September 26, 1992; “Bush signs nuclear test moratorium”, *The Independent*, October 3, 1992; “No more nuclear tests”, *The Washington Post*, September 28, 1992.

⁴⁰ Referring to the Russian and French moratoria, Clinton said “I think...we ought to get out there and join the parade on working toward a comprehensive test ban”. Speech by President Clinton, Sandia National Laboratories, September 18, 1992, quoted by Frank von Hippel and Tom Zamora Collina “Nuclear Junkies: Testing, Testing, 1-2-3 Forever” *The Bulletin of the Atomic Scientists* (July/August 1993).

⁴¹ Graham, 2002, p 239-240.

⁴² HR 1146, Bill to provide that any foreign nation that conducts a test of a nuclear weapon in the United States shall pay the costs resulting from the test, introduced by Michael J Kopetski, Representative of Oregon, in the House of Representatives, February 25, 1993. It was not voted on. See also: letter to UK Prime Minister John Major from Mike Kopetski, February 22, 1993; letter to Congressman Kopetski from CJR Meyer, Chargé d’Affaires, British Embassy, Washington, March 17, 1993.

⁴³ Graham, 2002, p 242.

⁴⁴ According to Gusterson, former Defense Secretary James Schlesinger argued the Anglo-American relations case, and Sidney Drell raised the argument about Senate ratification. Hugh Gusterson (book in progress).

⁴⁵ In HNE most of the fissile material in the device (highly-enriched uranium or plutonium) is replaced by non-fissile isotopes with similar material properties. When this is compressed with high explosives, the device barely reaches criticality and so nuclear yields are kept very low. See Chapter 6 for how HNE became a major issue in the CTBT negotiations.

⁴⁶ This account derives mainly from Graham, 2002, pp 237-256.

⁴⁷ Daryl Kimball, unpublished research.

⁴⁸ Though effective in exerting pressure on representatives, little of this lobbying reached the media. That changed when in early July, thirteen women carried placards and banners over the Buckingham Palace walls to protest against British nuclear testing in what they claimed was violation of Western Shoshone sovereignty in Nevada. Carried out three days after Clinton had made his decision, after logistical problems forced the women to delay their plans, the Buckingham Palace protest was out of time for the US debate, but it was instrumental in focusing British attention on the issue of nuclear testing. Since the Queen and most of the Royal Family were in Buckingham Palace prior to the unveiling of a set of new gates for Hyde Park, dedicated to the Queen Mother, there was a large number of guests and attendant journalists on the premises. The women's action gained unusually prominent front page coverage in Britain and publicity around the world. See, for example, "Mass Break-in at the Palace – The Queen in Residence as Protest Women Scale the Walls", *Evening Standard*, July 6, 1993. In subsequent media discussions and polls two things became clear: most British people had no idea that their government still conducted nuclear tests; and the public wanted nuclear testing to be banned.

⁴⁹ "Britain Scores First on Rumbling Tests", *The Guardian*, October 6, 1993; "China Explodes Nuclear Device despite US plea", *The Financial Times*, October 6, 1993; and "Waiting for the Earth to Move", *The Independent*, October 11, 1993.

⁵⁰ Zartman, 1989, p 13.

⁵¹ Ibid.

⁵² This point has been noted by a number of analysts. See Ann M. Florini (ed.), *The Third Force: The Rise of Transnational Civil Society*, (Tokyo: Japan Center for International Exchange and Washington D.C.: Carnegie Endowment for International Peace, 2000); Margaret E. Keck and Kathryn Sikkink, *Activists beyond Borders*, (Ithaca, NY and London: Cornell University Press, 1998); and Keith Krause, "Multilateral Diplomacy, Norm Building, and UN Conferences: the Case of Small Arms and Light Weapons", in *Global Governance* 8 (2002) pp 247-263.

⁵³ See R. Johnson, "Advocates and Activists: Conflicting Approaches on Nonproliferation and the Test Ban Treaty" in Florini, 2000, pp 49-81.

⁵⁴ Joseph S. Nye, "Can America Manage its Soviet Policy?" in Joseph S. Nye (ed), *The Making of America's Soviet Policy*, (New Haven, CT, Yale University Press, 1984) p 334.

⁵⁵ In his last defiant attempt to signal his opposition to the US moratorium and the idea of a CTBT, the outgoing President Bush denied the UN General Assembly's annual resolution on a comprehensive test ban treaty consensus, as normally required for UN resolutions to have some chance of being acted on by the CD. The vote on A/Res/47/47 (December 9, 1992) was 159 in favour and 1 against (United States), with 4 abstentions (China, France, Israel and the UK). This annual resolution quoted from the preamble of the NPT, urging all States to seek to achieve the early discontinuance of all nuclear test explosions for all time, and reaffirmed the particular responsibilities of the CD.

⁵⁶ The decisive role played by the Nevada-Semipalatinsk Movement in forcing the early closure of the Semipalatinsk test site was confirmed by a senior Russian diplomat in conversation with the author, Annecy, March 9, 2002. There was little recollection of whether publicity from the Greenpeace actions had any effect, although timing and circumstantial evidence suggest that it prompted Yeltsin's opportunistic call for a moratorium in 1990.

⁵⁷ Fen Osler Hampson, in Stein, 1989, pp 169-170.

⁵⁸ Ibid. p 168.

Chapter Five

The Process of Negotiations, 1994-1996: from Mandate to Signature

Bolstered by the continuing moratoria on testing by France, Russia and the United States, and President Clinton's active support for the Congressionally mandated requirement on the United States to negotiate a test ban by September 1996, the Conference on Disarmament finally reached agreement to give its ad hoc Committee on a Nuclear Test Ban a mandate to negotiate. The decision, adopted on August 10, 1993, stated: *"Convinced that, to contribute effectively to the prevention of the proliferation of nuclear weapons in all its aspects, to the process of nuclear disarmament and therefore to the enhancement of international peace and security, a CTB should be universal and internationally and effectively verifiable".*¹

After more than 20 years of the nuclear test ban sitting impotently in first place of the 'decatalogue' of priority tasks bequeathed from the first UN Special Session on Disarmament in 1978 (and CD agenda derived from it)², the CTBT finally found itself at the head of the arms control queue.

To provide context for the next three chapters' detailed analyses of the negotiations on scope, verification and entry into force, Chapter 5 gives a chronologically structured narrative of the CTBT negotiations. In providing an overview showing the various phases and identifying the major events and decisions, this chapter considers broader political influences on the negotiating dynamics, particularly the important relationship between the CTBT and the extension decision facing NPT parties in April-May 1995, and elections and policy changes in certain key states.³

Adopting a Negotiating Mandate

Accomplished under the auspices of Yoshitomo Tanaka, Japan's ambassador to the CD, the specifics of the negotiating mandate were the subject of intersessional discussions among CD members in and around the UN First Committee. Based largely on a bilateral draft circulated by Russia and the United States, and agreed among the P-5, the negotiating mandate underlined that the CTBT was to have both a disarmament purpose and a role in nonproliferation, and specified the establishment

of at least two working groups, for verification and for legal and institutional issues. Having been agreed in 1993, it was formally adopted at the first plenary meeting of the CD in January 1994, and (amended slightly, with regard to reporting dates) early in the CD sessions of 1995 and 1996.

MANDATE FOR AN AD HOC COMMITTEE⁴

Under Agenda Item 1

"Nuclear Test Ban"

[first adopted at the 666th Plenary meeting of the CD on 25 January 1994, CD/1238]

In the exercise of its responsibilities as the sole multilateral disarmament negotiating forum of the international community, the Conference on Disarmament decides to re-establish an Ad Hoc Committee under item 1 of its agenda entitled "Nuclear Test Ban", and to give priority to its work.

The Conference directs the Ad Hoc Committee to negotiate intensively a universal and multilaterally and effectively verifiable comprehensive nuclear test ban treaty, which would contribute effectively to the prevention of the proliferation of nuclear weapons in all its aspects, to the process of nuclear disarmament and therefore to the enhancement of international peace and security.

Pursuant to its mandate, the Ad Hoc Committee will take into account all existing proposals and future initiatives, as well as the work of the Ad Hoc Group of Scientific Experts to Consider International Co-operative Measures to Detect and Identify Seismic Events. The Conference requests the Ad Hoc Committee to establish the necessary working groups in order to carry forward effectively this negotiating mandate; these should include at least two working groups, one on verification and one on legal and institutional issues, which should be established in the initial stage of the negotiation, and any others which the Committee may subsequently decide upon.

The Ad Hoc Committee will report to the Conference on Disarmament on the progress of its work before the conclusion of the 1994 session.

1994: The "Year of the Questionnaire"

The political link between the test ban and the 1995 NPT extension decision shaped the postures of some delegations from the very first day. The first Chair of the ad hoc committee was Miguel Marín Bosch, ambassador of Mexico, who had been nominated by the G-21. His appointment was initially held up due to opposition from the British delegation, who regarded him as too radical on nuclear disarmament issues, and held him responsible for the failure of the 1990 NPT Review Conference.⁵

The G-21, most of whom had supported Mexico's demand that the NPT Review document must contain a commitment to negotiate a CTBT, refused to nominate an alternative candidate. As a consequence, Britain's tactic backfired when its ambassador, Sir Michael Weston, came under pressure from the United States and other members of the Western Group to withdraw the UK objections and let the negotiations to get off to a positive start. With France its only ally, Britain caved in after a week of intensive arm twisting, and Marín Bosch was affirmed as Chair.

Structurally, the CTBT proceeded along familiar diplomatic lines. Two working groups were convened in accordance with the mandate, and during the course of negotiations, the working group Chairs appointed various Friends of the Chair to coordinate specific aspects of the work. Responsibilities were allocated among the delegations according to expertise and regional representation, as follows.

Nuclear Test Ban Committee Chair: Miguel Marín Bosch (Mexico, G-21)

Working Group 1 on Verification

Chair: Wolfgang Hoffmann (Germany, Western Group)

Friend of the Chair on Seismic Verification: Ajit Kumar (India, G-21)

Friend of the Chair on Non-Seismic Verification: Peter Marshall (UK, Western Group)

Friend of the Chair on On-Site Inspections: Victor Slipchenko (Russia, Eastern European Group)

Friend of the Chair on Transparency: Bertil Roth (Sweden, in transition from G-21 to Western Group)

Working Group 2 on Legal and Institutional Issues

Chair: Ludwik Dembinski (Poland, Eastern European Group)

Friend of the Chair on Entry into Force: Alessandro Vattani (Italy, Western Group)

Friend of the Chair on Organisation: Roberto Jaguaribe (Brazil, G-21)

Opening Positions: Target Dates

Differences over timing were immediately revealed as the major states put forward their opening positions. The G-21, which argued that substantial groundwork had been covered in the work of the Nuclear Test Ban Committee and the Group of Scientific Experts over the previous two decades, called for a CTBT by the end of 1994. Taking the view that the proximity of the NPT extension decision had been a prime factor in bringing the NWS to the negotiating table, a number of nonaligned delegations and middle powers were prepared to compromise on treaty and verification detail in order to ensure that the CTBT was locked down before that leverage date passed into history. Some hoped to be able to hold the signing

ceremony at the United Nations in New York at the same time as the NPT Review and Extension Conference, scheduled to run for four weeks from April 19, 1995. Though careful to avoid any formal link with the NPT, advocates of indefinite extension of the NPT such as the United States, Russia and a substantial number of their allies were also willing to see the CTBT concluded or substantially agreed by then to create a positive climate for the NPT Conference.

Britain, France and China wanted a much slower timetable. France's strategy was driven by the objective of ensuring that the major political decisions relating to nuclear testing would be delayed until after the French General Election in May 1995. A new administration was expected, to replace the long-running presidency of François Mitterrand, and the nuclear establishment wanted to hold open its options, believing that further nuclear explosions would be necessary before a test ban entered into force. China was continuing to conduct nuclear tests, indicating that its nuclear and military establishments were not yet ready to stop. On October 5, 1993, after being publicly embarrassed by VERTIC's exposure of the first Chinese nuclear explosion after the moratoria, Beijing had issued a statement committing itself to a CTBT "no later than 1996".⁶ During the negotiations, China's delegation repeatedly complained of being rushed, and frequently reiterated the 1996 target date to make clear that this meant no earlier than 1996.⁷

Britain had no comparable reason for delay, other than the MoD's deep unhappiness about the US moratorium forcing a premature halt to Britain's nuclear testing and an apparent Conservative antipathy to the idea of a CTBT. Sir Michael Weston gave the UK's view of the CTBT-NPT relationship at the CD's first plenary of January 1994: "The prospect of indefinite extension of the NPT will be an important factor in convincing us that we can confidently move towards the conclusion of a CTBT."⁸ France's ambassador, Gerard Errera echoed this: "A satisfactory result [on the extension of the NPT] would confirm our participation in negotiations on a test ban. On the other hand, failure to extend the NPT [indefinitely] could put in doubt our commitment to a CTBT".⁹ Thus Britain and France aimed to undermine the link the nonaligned countries were making between conclusion of a CTBT and extension of the NPT by reversing it.

Opening Positions: Substance and Approach

As the NWS set out their opening positions, the middle powers sought to provide information and clarify the major issues and options. Sweden and Australia, both long time test ban advocates, circulated papers intended to build on the long years of prenegotiations.¹⁰ Though the nonaligned delegates wanted a CTBT to be concluded by the end of the year, the main priority for others was to lay down the technical and political basis for the nuclear test ban. From the beginning, the core issues of scope and verification were the main areas of debate, but scope negotiations as such were tightly locked up in the exclusive P-5 meetings, with little or no multilateral input. Entry into force was barely addressed, with most delegations assuming it would fall into place near the end. By half way through the first year of negotiations, there was little agreement about what kind of instrument the CTBT should be. Outside the P-5 meetings, most energy was devoted to the least politically contentious issue, the development of the international monitoring system (IMS). While the scientists attached to the larger delegations argued about the technologies most suitable and cost-effective for verifying a test ban, the diplomats sketched out the range of options for the basic treaty articles.

Knowing that the treaty's scope was the principal issue in the P-5 meetings, other states sought at least to get their positions put on record. Despite so-called peaceful nuclear explosions being enshrined in the NPT's Article V 25 years earlier and advocated for some time by various NWS and even several nonaligned states, the tide had turned against PNEs.¹¹ The June 1993 version of Sweden's draft test ban treaty called for a prohibition not only of all nuclear weapon test explosions but of all nuclear explosions.¹² China, the main delegation opposed to prohibiting PNEs, argued that the CTBT should cover only military explosions and should not hamper the use of nuclear explosions for civilian projects. Russia took an ambiguous stance. Even as scientists from the Ministry of Atomic Affairs (Minatom) provided technical information and arguments to Beijing to reinforce China's advocacy of PNEs, the official diplomatic position was that Moscow "would not oppose consensus" on this issue. In the early stage of negotiations, Iran and Algeria continued to express interest in keeping the option of PNEs on the table for further discussion.

The British delegation raised the question of safety tests, insisting that it might be necessary at some time in the future for the declared NWS to conduct tests to ensure the safety and reliability of weapons in their arsenals. Britain argued that requests to conduct safety tests should be considered on a special case basis and would have to be carefully defined, meet rigorous criteria, and be monitored by the CTBT's implementing authority to ensure that the testing was solely for the purposes stated. Attaching itself to Britain's position on safety testing, France argued for the NWS to retain the option to conduct a safety test every five or ten years.

Sweden and Germany spearheaded a proposal for the scope prohibition to specify *preparing* to carry out nuclear explosions, as well as prohibiting the actual nuclear tests. Their arguments were initially supported by many G-21 and some other Western delegations, who saw a ban on preparations as a way to amplify the verification regime beyond the task of monitoring after the event. They wanted to enable governments to take preventive action if field preparations such as mining and drilling were detected. Others, including the United States, Britain, Russia, France and Australia, argued that "preparations" would be difficult to define and distinguish from legitimate activities, and would add considerable expense and complications to the verification requirements.

A further set of scope-related problems also began to emerge, concerning low yield and hydronuclear tests, laboratory experiments and simulations. These issues formed the major part of the agenda for the P-5 sidebar negotiations, but until NGO analyses were circulated, many other delegations were unaware of the technology or the implications if such activities were omitted or included. As will be examined in more detail in the next chapter, four of the NWS were seeking a P-5 agreement to permit testing up to a certain threshold. Since this would have been unacceptable to the majority of negotiators, the P-5 aimed to embed their mutual acceptance of a so-called "safety threshold" above zero in generalised terms which had established legal precedents, for example in the PTBT. Their intention was to avoid any definition of nuclear explosions which would remove their margin of ambiguity. Beijing took a different tack, wanting "in depth" discussions to define the terms in the CTBT "in light of today's reality and possible future situation". China raised concerns that "there should be no loopholes or ambiguities which will give rise to different

interpretations, misunderstandings and disputes in the future”. Deliberately echoing nonaligned states’ concerns that the CTBT should not become another partial test ban, China suggested that it should “prohibit, at any place and in any environment, any nuclear weapon test explosion of any form which releases nuclear energy”.¹³

China’s desire to examine definitions in precise detail was perceived as a quicksand tactic, intended to bog down the negotiations until China’s weaponeers had conducted enough explosions or until a clear decision was made on whether to join a CTBT. Moreover, there were concerns that the defining process could either legitimise everything outside those specifications or, alternatively, tighten the restrictions beyond what the P-5 would be prepared to accept. In their first working paper, the G-21 placed markers against the CTBT being used merely as a nonproliferation device that would permit the P-5 to continue developing and improving their arsenals, but was equivocal on the question of PNEs. “The objective of a CTBT should not be to aggravate or perpetuate imbalance and discrimination. Accordingly, the scope of a nuclear test ban also should be directed to the prevention of both the acquisition of nuclear weapons and of the improvement of existing ones. Therefore, a CTBT should not be seen merely as a non-proliferation agreement but an agreement that can contribute to nuclear disarmament. The ban should be comprehensive and not have a certain threshold. No tests should be carried out under the pretext for safety purposes.... The treaty should not contain any provision that could be interpreted as restricting the transfer of nuclear technology for peaceful purposes.”¹⁴

P-5 Dynamics

In accordance with the usual practice of the Atlantic alliance, Britain and the United States had presented a (fairly) common front against the Soviet Union in the test ban talks that had taken place during the periods 1958-63 and 1977-80. Not so in 1994: in the first year of negotiations the P-5 dynamic could be characterised as 2:2:1 (US/Russia: Britain/France: China). For the first 15 months of negotiations, there was a visible US-Russian alliance on many issues that was significantly more constructive than the positions of the Anglo-French collaboration.

Wanting to be seen to take a positive lead, the United States made a strong opening statement to the CD. Washington’s commitment was further illustrated by President

Clinton's announcement on March 15 that the moratorium on testing would be extended to at least September 1995.¹⁵ Russia's position was close to that of the United States on most issues, but the Russian delegation kept a lower profile during the negotiations, providing technical support in verification discussions and supplying Friends of the Chair, but making few national demands, except in the confines of the P-5 meetings.

France also took an initially low profile in the substantive negotiations, tending to slipstream behind the positions of Britain and others, and concentrating on its strategy of delay. Although President Mitterrand continued to back the CTBT, his serious illness and the Presidential elections scheduled for 1995 meant that in nuclear policy terms he was a lame duck. The French delegation, headed by the shrewd pro-nuclear diplomat Gérard Érrera, clearly saw its role as holding off agreement on a CTBT until the new government could make its own determination of France's security interests. By alphabetical rotation, France was president of the CD when it opened in January, and so Érrera did not join Britain, Russia and the United States in making a major public policy statement on the CTBT at the start. Though France shared Britain's reservations about Márin Bosch, Érrera's holding of the CD presidency muted any overt opposition, leaving Sir Michael to oppose Márin Bosch's appointment in virtual isolation. Érrera was reported to be a forceful participant within the context of the P-5 meetings, which were soon convened on a regular basis and carried on throughout the negotiations. These meetings rotated among the P-5 Missions (usually on Tuesdays), although additional meetings could be convened at other times or at short notice.

The UK delegation made some constructive contributions, especially in the verification negotiations, but exhibited much more political reluctance than either the Americans or Russians. Britain's refusal to commit formally to a moratorium, despite the fact that it could not conduct any nuclear tests as a result of the US moratorium putting the Nevada Test Site under wraps, was indicative of the government's lack of enthusiasm for the CTBT. Britain gave the impression of going along because it had to. Its MoD and nuclear establishment had been deeply inconvenienced by the abrupt termination of their testing plans as a result of the US moratorium imposed in October 1992. At least three further tests for Trident warheads had been scheduled, and one (planned for November 1992) had already

been prepared. The MoD did its utmost to lobby for the moratorium to be lifted in July 1993 to allow for a few additional tests. They came close to success, but in the end President Clinton went with the advice of test ban advocates who warned that lifting the moratorium, even temporarily, would send the wrong signals and could endanger the start of the CTBT negotiations. From its beginning statement through to the conflict over entry into force in the final months of 1996, Britain's proposals were designed to protect its own nuclear weapons programme and ensure that the CTBT performed a primarily nonproliferation objective of preventing the emergence of new nuclear powers without jeopardising Britain's own reliance on nuclear weapons. Though the idea has been firmly dismissed by Sir Michael, the British delegation's negotiating style on political issues gave rise to much speculation that it was getting its own back on the Americans by 'fronting' for others: first, assisting France in ensuring the treaty would be delayed beyond 1995; and, later, for Russia and others over entry into force.¹⁶

China hoed its own singular furrow, periodically appealing to the G-21 with rhetoric about nondiscrimination and inalienable rights to peaceful uses, which should not therefore be interfered with when prohibiting weapons-related activities. China was particularly solitary during the first part of 1994, under Ambassador Hou Zhitong. His first public statement on the CD was not made until late March.¹⁷ Suddenly, in June, seven more working papers were tabled, undoubtedly linked with China's realisation that its positions might not otherwise be incorporated sufficiently in a rolling or Chair's text.¹⁸ The papers came on the heels of criticism from other CD members after China had conducted a further underground nuclear weapon test on June 10. China also responded by echoing the statement it made after conducting its October 5, 1993 nuclear explosion. Stressing that it "understands" the concerns of the NNWS and underlining its "great restraint" in conducting nuclear tests, China reiterated that the CTBT was to be a step towards "the complete prohibition and total destruction of nuclear weapons". It departed from the earlier statement in stating only that China "supports the idea that the negotiations should result in a treaty no later than 1996", giving rise to speculation that China was still hedging its bets on the CTBT.¹⁹

Thwarting an Early Chair's Text

During May 1994, Marín Bosch made the assessment that to achieve a treaty by April 1995, as the G-21 continued to advocate, negotiations had to begin on a draft text during the final part of the 1994 session. This had been the expectation of many delegations when negotiations began in January. Accordingly, he began to put together a Chair's draft text, intending to table it before the second part of the session ended on July 1. The timing was chosen so that the CD delegations could get their government's instructions and be ready to negotiate in the final part of the session. By putting down a 'clean' draft text, without any square brackets indicating alternative language, Marín Bosch had intended to accelerate the negotiations by freeing the delegations from possessiveness over particular brackets and directing their attention to the main questions. Before the Chair's draft could see any light of day, however, Britain, France and China had declared themselves utterly opposed to the very concept of a Chair's text at this time.²⁰

Sir Michael Weston declared (somewhat intemperately, according to eyewitness reports) that a Marín Bosch text would be consigned to the waste paper basket and be taken no more seriously than the Swedish and Australian drafts.²¹ Worried that his strategy of delaying the conclusion of the treaty until after the French elections would be upset if Marín Bosch's text turned out to be a good basis for accelerating the negotiations, Érrera's opposition was particularly vociferous. He accused the Chair of attempting to pre-empt the negotiations, and whipped up anxiety over what he dubbed Marín Bosch's "vision text". Although the United States said it preferred to see the content of the Chair's draft before taking a position, Érrera's threats to pull out of the negotiations if presented with (in his own words) a "*fait accompli*" made a number of delegations very nervous. By the third week of June, the Anglo-French opposition had caused the chairs of the two working groups and some ten other delegations to express concern that a Chair's unbracketed text would be premature and counterproductive. To the Mexican delegation's surprise, this group comprised not only EU allies of Britain and France, but included G-21 members Pakistan, Indonesia and Algeria. Faced with such opposition, Marín Bosch jettisoned the idea of presenting a Chair's draft and instead asked the CD Secretariat to compile a list of the options and proposals so far discussed.

Up to this point, there had been a relatively cosy atmosphere in the negotiations, with positive talk and generous efforts to bring everyone's concerns on board. The United States had made it a policy priority to try to keep the P-5 together and talking, and Germany made a point of not criticising French positions which it disliked.²² Marín Bosch was concerned that in view of the French and Chinese interests in delaying conclusion, these attempts to keep everyone together would sacrifice a timely treaty. Moreover, in common with most of the G-21, he feared that an unfinished CTBT would be allowed to fall off the disarmament agenda if the NWS managed to extend the NPT without it. His strategy was partly designed to provoke an early confrontation and clarification of objectives. He had calculated that there would be opposition from France, Britain and China, but he concluded that since they would come under pressure whenever this stage was reached, it was better to force the crisis early. In his view, all the relevant questions had been canvassed and discussed, and it was now time to start hard negotiations on draft treaty text.

The strategy failed, in part because Marín Bosch failed to explain his reasoning and intentions early enough to his allies and, most importantly, to the Chairs of the working groups, to ensure that he had their support. By the time he undertook consultations with other delegations, there had been a week of rumours and intense speculation about the nature of his "vision text". As a result of corridor lobbying from Érrera, France's anxiety at being boxed into a corner had elicited concern (and some sympathy). Several argued that instead of tabling a clean text, Marín Bosch should issue a substantially cleaned-up, streamlined text, retaining some of the most contested options in brackets. This would have met the objective of focusing and clarifying the negotiations and distinguishing the crucial areas of debate, and would have been more likely to gain support, including from the working group Chairs, serving to isolate those whose primary objective was to delay the negotiating process until a time more suited to their individual political needs. In the end, faced with the determination of France and China (abetted by Britain) to ensure that the treaty could not possibly be concluded before 1996, Marín Bosch dropped his attempt to table a draft text and settled for a compendium of proposals from the two working groups.

The First Rolling Text

In response to suggestions from the US delegation for sorting the proposals into categories reflecting the levels of discussion and support, the working groups refined the compilations and added treaty-formulated language, placing alternative proposals and wording in square brackets. By the end of the 1994 session, this unwieldy 93 pages had become what many diplomats were calling a “rolling text”.²³

On legal and institutional issues, Working Group 2 had produced substantially clean “category 1” text, with very few brackets, on the following standard treaty articles: Measures to Redress a Situation and to Ensure Compliance, Including Sanctions; Settlement of Disputes; Privileges and Immunities; Signature; Ratification; Accession; Depositary; Status of the Protocol(s) and Annex(es); and Authentic Texts. On its “category 2” text, WG.2 had organised the main options for scope, the implementing organisation, entry into force, duration and withdrawal and review of the treaty.

Working Group 1 on Verification had covered a great deal of ground, but its text was still a compilation of technical and political proposals and options, much of it not yet developed into treaty language. At root, it was hampered by continuing disagreements over how fully defined the verification requirements should be. By this point, candidate technologies for supplementing the envisaged seismic network included: radionuclide sensors (for particulates and/or noble gases); hydroacoustic; infrasound; satellites; optical; and electromagnetic pulse (EMP) monitoring.²⁴ There were differences over which networks should be incorporated into the implementing organisation and the international data centre (IDC) and paid for by States parties, and which should be provided through national or multinational technical means. In general, Russia, which was very worried about costs and favoured what it called an “evolutionary approach”, proposed that national technical means be used to supplement the basic seismic and radionuclide networks already broadly agreed. While many nonaligned states appeared initially to support this pragmatic approach, a handful of others, particularly Pakistan and India, joined China in opposing the incorporation and legitimation of NTM.

Although the outgoing ambassador for the Netherlands, Hendrik Wagenmakers, rather disparagingly described 1994 in the CD as the “year of the questionnaire”,²⁵ others portrayed the first year as one of diligent preparations, aimed at laying a careful, thorough foundation for the treaty. Certainly, 1994 was characterised by experts and questionnaires revisiting all the fundamental concepts of verifying a nuclear test ban, but there was a lack of focus in much of the technical work.²⁶ The failure of the Chair’s attempt to force a prioritisation of the political decisions with a draft text had two important consequences. On the positive side, expert papers and working group discussions became more tightly focused in an attempt to bring a rolling text out of the plethora of written and verbal proposals, resulting in the summer session being the most constructive and relevant of 1994. Furthermore, Marín Bosch’s initiative had flushed out into the open proposals and positions which were being kept back for tactical reasons. Thus, states known to have particular interests but which had hitherto provided a low key presence, notably China and Israel, began issuing numerous working papers with specific proposals to ensure their inclusion in the rolling text. China, in particular, began to engage more directly in the multilateral negotiations, a factor largely credited to the replacement of Hou Zhitong by Sha Zukang, a Beijing official who was far more confident with the complexities of the test ban’s technical issues, and who had the political authority and linguistic fluency in English to hold his own, whether among the P-5 or with middle power and civil society critics of Chinese positions.

The defeat of the Chair’s text was a pivotal moment, ensuring that a CTBT would not be concluded before the 1995 NPT Review and Extension Conference. From then on the target date was accepted as September 1996, as contained in the 1992 US Senate Bill that first mandated the testing moratorium.²⁷ There was a further important consequence, unrecognised by the P-5 until many months later. Losing the pre-NPT target date also meant losing whatever opportunity might have existed to get tacit nonaligned support for a low threshold permitting sub-kiloton hydronuclear experiments. Similarly stymied were those who had favoured the concept of a CTBT as a primarily political and norm-building instrument, with a simplified verification system backed up by NTM; from August 1994 on, it was clear that the treaty would not be concluded unless it met stringent technical and compliance criteria.

1995: Testing and Tidying

The second year of negotiations was heavily influenced by political events. Chief among these was the NPT extension decision and affirmation by NPT parties of the target date of 1996 for the CTBT; and changes of government or other political processes affecting decisionmaking in some of the key countries regarding the role of nuclear weapons and capabilities, resulting in France resuming testing for one final series and India undertaking preparations which were detected, sparking a nationalistic media debate across South Asia. China, meanwhile, doggedly continued its testing programme, but appeared more engaged in the detail and progress of the negotiations. In Geneva, the Nuclear Test Ban Committee, chaired in the second year by Polish diplomat Ludwik Dembinski, from the nominal Eastern European group, busied itself with tidying up the 93 pages of text it had inherited.

As before, two working groups were established. Following a dispute within the Western Group, during which France vetoed Australia's candidacy (reportedly viewing the Antipodeans as too actively anti-nuclear), the Dutch ambassador, Jaap Ramaker, was made Chair of Working Group 2 on Legal and Institutional Issues. With some of its key ambassadors due to leave the CD during the year, the G-21 had difficulty proposing a candidate to chair Working Group 1 on Verification. India was clearly one of the few delegations with sufficient expertise and a track record of contributions during the previous year, but the Indian delegation declined. Though overstretch of its diplomatic resources was cited as the reason, this was not generally believed: a number of diplomats privately speculated that India wanted to avoid becoming too close to the process of negotiations because it was still holding open its options to distance itself from the treaty. As it became obvious that India would not be persuaded to chair WG.1, there was a flurry of diplomatic activity among members of the G-21 and Western Group, notably Mexico, Morocco, Canada, Germany, and Japan. To avoid delaying the start of the CTBT negotiations, the G-21 agreed to support Sweden, which had been a G-21 member until 1993 and was not yet admitted into the Western Group, despite recently becoming a member of the EU.

The structure of formal negotiations and appointments for 1995 showed the growing dominance of Western experts in managing the CTBT negotiations:

Nuclear Test Ban Committee Chair: Ludwik Dembinski (Poland, Eastern European Group)

Working Group 1 on Verification

Chair: Lars Norberg (Sweden, ex-G-21, not yet accepted into Western Group)

Friend of the Chair on Technical Verification: Peter Marshall (UK, Western Group)

Friend of the Chair on International Monitoring System: Patrick Cole (Australia, Western Group)

Friend of the Chair on International Data Centre: Ralph Alewine (USA, Western Group)

Friend of the Chair on OSI – consultation, clarification and trigger: Klaus Arnhold (Germany, Western Group)

Friend of the Chair on OSI – access provisions, time-lines: Victor Slipchenko (Russia, Eastern European Group)

Friend of the Chair on OSI – reports, follow up, sanctions: Hamid Baidi-Nejad (Iran, G-21)

Friend of the Chair on Transparency and Confidence-Building: Richard Ekwall (Sweden, in transition from G-21 to Western Group)

Working Group 2 on Legal and Institutional Issues

Chair: Jaap Ramaker (Netherlands, Western Group)

Friend of the Chair on Entry into Force: Stephan Keller (Germany, Western Group)

Friend of the Chair on Implementing Organisation: Ajit Kumar (India, G-21)

Organisation team²⁸: Magda Bauta Solés (Cuba, G-21); Donald Sinclair (Canada, Western Group); and Navtej Singh Sarna (India, G-21).

Thwarted in its bid to chair WG.2, Australia aimed to make an impact with several important contributions early in 1995. First, Ambassador Richard Starr called for the pace of the test ban talks to be accelerated by focusing on six outstanding ‘clusters’ of issues: scope; verification; organisation; entry into force; review and amendments; and duration and withdrawal. He then tabled a draft text on scope, which rapidly gained adherents from all sides, including the United States. This prohibited “any nuclear weapon test explosion or any other nuclear explosion” and was widely viewed as a front-runner for attracting consensus, even by some who were not yet ready to abandon their own preferences.²⁹

Opting Out of the 10-year Opt-Out

Seeking to provide impetus to the second year’s negotiations, the Deputy Director of ACDA, Ralph Earle, announced at the first plenary of 1995 that the United States had dropped its proposal for a ten year ‘opt-out’ provision.³⁰ This provision, introduced in late August for inclusion in the article relating to review of the treaty, would allow a comparatively easy procedure for withdrawal from the treaty at the first review conference, ten years after entry into force. The language was not tied to national

security or the safety and reliability of nuclear weapons, although the US delegation justified the opt-out provision in those terms. The opt-out concept, which echoed Carter's attempts to appease test ban opponents during the 1977-80 tripartite test-ban talks with a CTBT of only five (then three³¹) years duration, was immediately condemned from all sides, most vociferously by Washington's major allies. Opponents raised concerns that such an easy opt-out option trivialised commitment to the treaty, its credibility and duration, and would have negative consequences for the arms control and non-proliferation regimes as a whole. Even the US delegation appeared ambivalent, feeding speculation that this unpopular proposal was the outcome of an internal power struggle between pro- and anti- CTBT forces among Washington's competing agencies, with the Pentagon desirous of holding open the option to conduct tests in the future.

During the intersessional period of the CD in late 1994, when many governments and diplomats continued informal negotiations and politicking on the CTBT in New York, at the UN First Committee, a number of nonaligned states and US allies put Washington under pressure about the easy opt-out proposal, while the NGOs and think-tanks ran their own campaigns to get it withdrawn.³² The Campaign for the NPT³³, whose support for indefinite extension of the NPT gave it access and influence with the Clinton administration, used the CTBT-NPT relationship as an effective lever. Underlining the importance of the CTBT to the US government's goal of indefinite extension, they had made withdrawal of the easy opt-out provision a high priority, and strongly backed a zero yield scope.³⁴

Though Earle's announcement of the US withdrawal of the opt-out proposal was widely welcomed, some expressed scepticism about Washington's real intentions. Marín Bosch characterised the opt-out provision as a white elephant: "you take a white elephant into the living room, everyone groans; you take the white elephant out again and everyone cheers you as if you have accomplished something wonderful".³⁵ Marín Bosch was not the only one to view the timing of this proposal and its withdrawal as a not-very-subtle deployment of a bargaining chip, intended both to gain credit in the run-up to the NPT conference and to distract attention from what many perceived to be the US' real interests in keeping HNE. Though the United States had hoped its gesture would boost the negotiations, the impact was short

lived.³⁶ Its fellow negotiators pocketed the concession and moved on. Negotiations then progressed rather slowly between January and April 1995, with a determined but plodding concentration on verification, especially the IMS.

NPT Agreements and Testing

At the CD's final plenary before the NPT Conference in April 1995, Britain announced its withdrawal of the bracketed language referring to exceptions (for safety tests) and endorsed the front-running scope text proposed by Australia in March 1995.³⁷ Timed to boost the chances of indefinite extension of the NPT, Britain's withdrawal was coordinated with France.³⁸ When the two European NWS dropped their bid for exceptional safety tests, it was widely assumed that they had received some kind of assurance from the United States and Russia that HNE or even low yield tests would be exempted from the treaty's core prohibition. As a consequence, in view of the stated US and British support for the Australian scope text, more of the G-21 began expressing distrust for Australia's proposal, portraying it as a camouflage for low threshold testing.

Their concerns were reasonable since the real question under debate in the P-5 sidebar negotiations was how high a threshold could be established under the rubric of a *comprehensive* test ban (without losing the NNWS' support). The P-5 were united by the dominant objective of retaining their nuclear weapons programmes under a CTBT. They competed against each other, however, over the thresholds to be permitted or prohibited. Asymmetric in their research resources and technological development, each of the P-5 sought a threshold that would provide least constraint to their own research options. Their decisions were complicated by two other motivations: firstly, while wishing to maximise their own options under the CTBT, the P-5 were also keen that others should not gain relative advantage; secondly, there was no point in a treaty that the NNWS and civil society would reject. The United States, in particular, was aware that a too-obvious threshold test ban treaty would not be acceptable.

The relationship drawn between achievement of a CTBT and the credibility and sustainability of the NPT was a major factor in preventing the P-5 from making an internal deal on a threshold. Moreover, in view of the civil society driven politics that

had brought the United States to the negotiating table, it was unsurprising that the US position most clearly reflected the necessity to maintain the NNWS' and NGOs' support. After an internal debate in 1993 over a low threshold treaty set at 1 kt, the Clinton administration had come down in favour of a comprehensive ban,³⁹ but designated "zero" as the "one-point-safety"⁴⁰ margin of 4 lb (1.8 kg) fission yield. After some initial bargaining with numbers in the first few months of 1994, persistent reports indicated that Russia wanted exemption under the treaty to test up to at least 10 t of fission release. The UK favoured a level of around 100 lb. (45 kg), but France required a much higher threshold of over 100 - 300 t. China refused to enter the numbers game, having proposed a 'no-yield scope' that would cover all military explosions "which release nuclear energy". Nevertheless, it was an open secret that if thresholds were to be agreed at all, China would favour something at the higher end, perhaps around 500 t.⁴¹

The CTBT, which had been a major cause of contention in past NPT review conferences and the principal factor in the failure of the Fourth Review Conference in 1990, was a focus of considerable discussion but not a stumbling block to consensus at the 1995 Review and Extension Conference. Although a large number of states took the opportunity to emphasise their opposition to thresholds or PNEs, comments on the CTB negotiations were generally very positive, with only one serious division (over PNE).⁴² Several states, including CD members Argentina, Nigeria and, more surprisingly, Australia and Sweden, still called for the CTBT to be concluded in 1995. They were joined by two of the more active applicants for CD membership, New Zealand and Norway. By contrast, a document issued by the NAM gave no target date for the treaty, and a number of NAM countries, including Mexico, shifted the deadline for CTBT conclusion to 1996. Their reasons were pragmatic: they no longer saw any chance of getting a treaty in 1995; considered that pinning the P-5 down to 1996 was achievable and would be taken more seriously; and wanted a consensus statement in the NPT Conference as a politically binding multilateral commitment that would lock the P-5 into their various national statements supporting conclusion by 1996.⁴³

PNE discussions took place in Main Committee III⁴⁴, designated primarily for consideration of Article IV's provision on the peaceful uses of nuclear energy. Article

V, also discussed in this Committee, contained a lengthy provision for making “the potential benefits from any peaceful applications of nuclear explosions” available to NNWS that China was determined to exploit.⁴⁵ To undermine China’s rationale for PNE, which relied on both Article V and Article IV’s promise of an “inalienable right... to develop research, production and use of nuclear energy for peaceful purposes without discrimination...” Australia gained the support of 41 countries for its working paper on PNE. The paper’s sponsors cut across group lines, engaging nonaligned states as well as Western and Eastern Europeans. The paper proposed language to be included in the final document of the NPT Conference to the effect that the potential benefits from PNE had not been demonstrated and that there were serious concerns about the environmental consequences and implications for nuclear nonproliferation. To reassure states that wanted to make certain that any diminution of Article V would not affect the general principles enshrined in Article IV, the PNE paper contained the rider that “a ban on all kinds of nuclear explosions [does] not constitute a detriment to the peaceful utilisation of nuclear energy”.⁴⁶

Isolated on this issue, China found it difficult to argue for the deletion of the offending paragraphs or for substantial amendments, as the paper had been very cleverly drafted as a series of factual statements. It noted, for example, that the IAEA had received no request for consideration of PNE services and that no state party had an active programme for PNEs. China managed to insist that the final rider be removed and that there should be additional wording that the CD should “take this situation and future developments” into account. Russia, still exhibiting some ambivalence on the question of PNEs, joined consensus and did not impose any brackets around any PNE language, but reserved the right to raise the issue at a later stage. Despite China’s obvious discomfort and Russia’s belatedly expressed reservation, the three paragraphs on Article V in the report of Main Committee III were accepted by consensus and passed to the Drafting Committee.⁴⁷

After the decisions on extending the NPT and strengthening its review process had been adopted on the penultimate day of the Review Conference, attempts to win consensus on the Final Declaration encompassing the review of the treaty deteriorated, chiefly over the issue of nuclear disarmament. In the end, to the immense frustration of many NPT parties, the Conference closed without adopting a

Final Declaration. Despite the fact that three-quarters of the Drafting Committee's text – essentially everything in the reports from Committees II and III – had received consensus agreement, they were formally lost. The President of the Conference, Jayantha Dhanapala, ascribed the failure to two principal causes: poor management of Main Committee I by its Chair and the consequent failure to agree large parts of its review of Article VI⁴⁸; and intransigence from the P-5, once they had achieved their objective of extending the treaty indefinitely.⁴⁹

On the penultimate day of the Conference, the NPT had been indefinitely extended as part of a package of interlinked decisions taken without a vote. These included decisions on Principles and Objectives for Nuclear Non-Proliferation and Disarmament and Strengthening the review of the treaty, and a resolution on the Middle East. With reference to the CTBT, Paragraph 4 (a) of the Principles and Objectives provided a target date of “no later than 1996” and stressed that the NWS “should exercise utmost restraint” pending the CTBT's entry into force.⁵⁰ No mention was made of PNEs or Article V. The details of the statements and discussions related to nuclear testing at the NPT had far less impact on the CTBT negotiations, however, than the divisive politics of the NPT Conference and the perceived loss of the NPT's restraining leverage on the nuclear weapon states once the decision on indefinite extension was safely in the bag.

France Breaks its Moratorium

The NPT extension decision overshadowed the CTBT negotiations in 1995. In the preceding months the mood was of nervous anticipation. Following the indefinite extension decision a number of states revealed their true cards, with negative and positive consequences. As discussed above, France and China had been working to instructions to keep the pace slow. France's priority had been to evade any commitments which might tie the hands of the incoming president before the May 1995 elections. China, still testing and developing, wanted to avoid being squeezed by an early conclusion of the treaty. The US policy of keeping the P-5 together enabled France and China to dictate the pace, although it must be acknowledged that other reluctant states were slipstreaming in their wake, particularly (as began to emerge more openly) India.

The ink was barely dry on the NPT agreements when China exploded a nuclear bomb in the range of 85-110 kt at its test site at Lop Nor, Xinjiang Province, on May 15.⁵¹ That China waited until after the NPT Conference had concluded was claimed by a senior P-5 delegate to have been solely due to the efforts of P-5 diplomats, as China's military decisionmakers – thinking chiefly of terrestrial conditions and weather – had planned the test for early May.⁵² Although some countries attending the UN Disarmament Commission (UNDC) meeting gave ritualistic expressions of regret, it was left to NGOs to condemn the explosion as inconsistent with the NPT obligations and the Principles and Objectives' commitment to use "utmost restraint".

France's newly installed president, Jacques Chirac, waited a bare month before announcing on June 13 that France would resume nuclear testing to conduct up to eight explosions between September 1, 1995 and May 31, 1996. Chirac's statement pledged that these would be the last tests conducted by France, and that he would sign the CTBT, if concluded, in 1996. Despite these assurances, the prospect of more French nuclear explosions in the South Pacific ignited public anger and protests across much of the world, and created a political backlash in the Pacific. The loudest opposition was heard from those that had backed indefinite extension, notably Australia, South Africa and Japan. EU solidarity kept the European governments practically mute, though civil society in Germany and Sweden led initiatives to boycott French goods.⁵³

Nonaligned states' reaction merged with the anger some felt about the NPT outcome. Iran's ambassador, Sirous Nasser, remarked that the P-5's concerns to achieve their preferred NPT extension outcome had served as a greater deterrent to nuclear testing than the moratoria. He reminded the CD that there had been two views at the NPT Conference: that indefinite extension would promote a climate of confidence, which would lead to nuclear disarmament; or that indefinite extension would allow the NWS to pursue their own agendas and objectives with even greater freedom. It was clear from his remarks (and the related comments of other nonaligned representatives) that the French and Chinese tests were seen to exemplify the latter view.⁵⁴ Rather ironically, as India continued to reject the NPT, Ambassador Satish Chandra of India made a statement on behalf of the G-21 in which he expressed the deep concern of nonaligned parties to the NPT that the French and Chinese tests "run counter to the

decisions adopted at the 1995 Review and Extension Conference... and jeopardise the credibility of the NPT regime.”⁵⁵ Addressing the CTBT negotiations directly, the G-21 statement continued: “Conducting or intending to conduct nuclear weapon tests over and above the substantial number of tests already conducted raises serious questions about the nuclear weapon states’ real intentions with regard to continued development of nuclear weapons. Recent reports about discussions among the nuclear weapon states on a threshold for a test ban have also given rise to deep concern... the CTBT should be an instrument against both horizontal and vertical nuclear proliferation and should effectively contribute to nuclear disarmament. To admit low-yield nuclear testing or to permit testing below a certain threshold by using any technique would defeat such purposes... No tests should be allowed for any reason or justification including the so-called safety and reliability of the nuclear weapons and perfecting the techniques to further develop nuclear weapons. The ban should be comprehensive.”⁵⁶

By this time, the major aspects of the P-5 negotiations on what they termed ‘activities not prohibited’ (ANP) had been exposed and discussed in *Nuclear Proliferation News*, in which I provided all CD delegations and their governments with detailed, fortnightly summaries of the CTBT negotiations. It was in part due to this exposure that the G-21 statement explicitly challenged the legitimacy of the private P-5 negotiations on scope and thresholds. The G-21 wanted all aspects of the CTBT to be multilaterally negotiated in the CD, and called on the NTB Chair to take “appropriate measures to ensure that negotiations are held for a clear understanding on the scope of the future CTBT.”⁵⁷ The G-21 statement was ignored by the P-5 and relations between the nonaligned CD members and the NWS continued to deteriorate. In June 1995, at the request of the G-21, Working Group 2 held a session devoted to basic obligations. India and Indonesia put in proposals to tighten up the CTBT scope. Indonesia sought to ban all nuclear testing, including laboratory tests and simulations.⁵⁸ India aimed to define a nuclear explosion.⁵⁹

Largely due to the timing of China’s first test of 1995 and President Chirac’s termination of the French moratorium, a sense of betrayal and frustration pervaded the CD session of May 29 to July 7. Meetings were characterised by rancorous exchanges between some of the NWS and key delegations from the Western group

and G-21.⁶⁰ One senior US diplomat called the polarisation and hostility a “post-NPT hangover” and predicted that it would improve over the summer.⁶¹ He was right; the first clear political breakthrough of the CTB negotiations occurred during August, as the result of French tactical manoeuvres, a dramatic resurgence of civil society protests against nuclear testing, and Clinton’s decision to take the moral and political high ground on scope.

Breakthrough on Zero Yield

On August 10, as described in greater detail in Chapter 6, Érrera unexpectedly informed the CD of France’s acceptance of the Australian text, claiming that this proved the falsity of criticisms that the resumption of French nuclear testing would harm the negotiations.⁶² The next day, President Clinton announced his decision “to negotiate a true zero yield comprehensive test ban”.⁶³ Clinton’s decision was the outcome of weeks and months of interagency deliberations and civil society lobbying. It was understood in Washington to be the breakthrough decision to give up HNE that the test ban advocates had been working so hard for. By linking this announcement on zero yield with a renewal of US approval of the Australian scope text, and by exactly quoting the relevant part of that text as “any nuclear weapons test explosion, or any other nuclear explosion”, the Clinton administration placed on the record its reinterpretation of the Australian text to exclude low yield or hydronuclear testing. At the same time, to appease critics in Congress and the nuclear laboratories, Clinton specified six conditions for the United States to join a CTBT, referred to as “safeguards”, covering stockpile stewardship; the maintenance of modern, well financed nuclear laboratories; the retention of a continued ‘basic capability’ to resume nuclear testing; continuation of research and development programmes to improve treaty monitoring and operations; continuing resources and development in intelligence gathering and information relating to nuclear arsenals and related nuclear programmes worldwide. The sixth safeguard, repeated in his speech, was that the United States President would “be prepared, in consultation with Congress” to exercise its right under the treaty article covering withdrawal on grounds of “supreme national interests”⁶⁴ and conduct whatever testing was required in the event that “I were informed by the Secretary of Defense and Secretary of Energy – and advised by the Nuclear Weapons Council, the Directors of the DOE’s nuclear weapons laboratories and the Commander of the US Strategic Command – that a high level of

confidence in the safety or reliability of a nuclear weapons type which the two Secretaries consider to be critical to our nuclear deterrent could no longer be certified".⁶⁵ The last qualification, allowing "supreme national interests" to be interpreted in terms of the assessed function and condition of the US nuclear arsenal, resembled France's argument that the CTBT must be compatible with the continuing reliability of the French nuclear arsenal, a justification which underpinned France's explanation for conducting a further series of tests. The other conditions very closely echoed the safeguards which the nuclear weapon laboratories and the Pentagon had extracted from President Kennedy more than thirty years earlier.

A number of CD members pushed Russia and China for their agreement, but to no avail. Referring to China's early advocacy of a 'no-yield' scope, Australia called on China to "reaffirm its 1994 commitment to zero yield", but received no response. London gave an ambiguous reaffirmation of the Australian text on August 17 and, on September 14, just before the end of the CD, Britain formally announced its acceptance of the zero yield decision, underlining also its reliance on the conditions specified by France and the United States for joining the CTBT, including the understanding with regard to supreme national interests.⁶⁶

Gains, Losses and Shifts in 1995

The major gains in the second year of the CTBT negotiations were on scope, verification and duration of the treaty. First, the US dropped its ten year opt-out; then the UK and France withdrew their demand for exceptions for safety tests; and finally, three of the NWS abandoned their arguments for a threshold to cover hydronuclear and low yield testing. As the French negotiating posture shifted markedly from 'delay' to 'facilitate', Russia's became more obdurate than anticipated. Complaining that Russia had not been "properly consulted", the CD delegation was overtly hostile to the zero yield decision.⁶⁷ One senior official characterised it as "the end of the CTBT", and said he feared that Russia would not be able to maintain its arsenal properly under zero yield conditions.⁶⁸ Expressing concern that British nuclear options would be more constrained by the zero yield decision than originally anticipated, some UK officials also complained about a lack of consultation from their ally the United States.⁶⁹

At the same time, British diplomats commented on China's silence over the zero yield decision and speculated openly that Beijing would cause problems by insisting on verification to the zero level, which the scientists overseeing the international monitoring system had deemed to be infeasible.⁷⁰ Though these fears proved to be unfounded, there was much in China's negotiating posture to cause observers to wonder, as I noted at the time, "when China will begin negotiating the same treaty as the rest of the CD".⁷¹ With the exception of Pakistan, an ally on political rather than substantive grounds, China was alone in still demanding PNEs, paragraphs on the peaceful uses of nuclear energy, and a stated relationship with other treaties (assumed to be for the purposes of invoking the legality of PNEs enshrined in Article V of the NPT). China also continued to take a substantially different position from the converging majority on many aspects of verification, including satellites. Beijing's reservations on the use of national technical means were shared by a number of nonaligned countries, but the strongly held positions of China and Pakistan gave most concern, as they reinforced each other in their denial of any possibility of supplementing the IMS with NTM, while at the same time arguing that the monitoring system would be inadequate without additional technologies.

During 1995, the IMS had been substantially finalised, with near agreement on the seismic network and on three complementary technologies: hydroacoustic, infrasound and radiation monitoring. Other technologies had not been ruled out, but the IMS was regarded as almost finalised. During the year, the diplomats and their technical advisers had considered the range of possibilities and had decided to design the IMS based on a base-line criterion of one kiloton TNT-equivalent-explosion. This meant assuring the highest level of detection and identification for explosions of one kiloton or more, and was chosen with cost effectiveness in mind. The scientists had assured the diplomats that the synergistic interaction between the various verification means would actually ensure detection well below 1 kt. This was intended to give verification confidence, as a potential violator would face significant (and not easily calculable) risks of detection at much lower levels. The case was made that if any state sought to argue that a zero yield treaty required zero to be the baseline criterion for monitoring and detection, the technical and financial requirements for verifying the treaty would become overly expensive and technically infeasible.

France's nuclear tests, the first of which was conducted on September 5, caused loud condemnations around the world.⁷² Within the CD, however, the criticisms were rather muted. France had been at pains to signal that its intention was not to upset the negotiations. The resumption was characterised as a "final series", the number of tests was specified as "up to eight", and the date by which they would be finished was announced – May 31, 1996.⁷³ Whether as part of France's strategy or in response to pressure from worldwide protests, Chirac softened the effect of the first test by indicating that fewer than eight tests might be conducted, finishing somewhat earlier than May.⁷⁴ Whether or not France had actually triggered the zero yield breakthrough or engaged in pre-emptive timing with regard to the Clinton decision, it appeared happy to be cast as progressive and constructive. On other issues, too, including verification and on-site inspections, France became more active in putting forward pragmatic initiatives to promote compromise. This did not mean that France would forego its dominant interests as a NWS. Far from it, the decision to test, as Érrera frequently stressed, enabled France to meet the demands of its weaponeers and defence department within the context of the CTBT, still regarded primarily as a nonproliferation measure for curbing the nuclear ambitions of India, Pakistan, and others.⁷⁵

Zero Yield Aftermath

After the zero yield decision, Russia began to cause greater concern than during the first 18 months of negotiations. Previously, in the principal issues relevant to the CTBT and NPT, Russia had taken positions close to those of the United States. During 1994 and the first part of 1995, Geneva diplomats frequently referred to the 'P-4', indicating that the United States, Russia, Britain and France were broadly in the same camp. Moreover, it was noted that in the CTBT context, US relations with Russia seemed generally closer and more compatible than US relations with either Britain or France. Nor did the Russian diplomats seem to object to this characterisation of their relationship with the United States as partners rather than rivals. Outside the CTBT, however, there was a growing push to expand NATO to include former Warsaw Pact countries. The possibility that NATO nuclear weapons could be deployed up to Russia's borders, despite assurances from US Secretary of State Warren Christopher that there was "no intention, no plan and no need to station nuclear weapons on the territory of any new members", fuelled a resurgence of

Russian anxieties about maintaining their own nuclear arsenal.⁷⁶ NATO expansion and the growing US debate about missile defence also fed the nationalist factions within the Duma and undermined those in Yeltsin's administration who were positive advocates of arms control measures like the CTBT, such as his foreign minister, Andrei Kozyrev.⁷⁷

Whether due to the zero yield decision, the politics of the NPT extension, the shift in French policy, or a combination of exogenous political influences, the summer of 1995 heralded changes in the dynamics of the P-5 multilateral negotiations. As noted above, the alliances among the P-5 from January 1994 to April 1995 could be characterised as 2:2:1 (US/Russia: Britain/France: China). After August 1995, France moved into a more constructive posture on many issues, including verification and entry into force, bringing it closer to the United States, which still tried to be "out front pulling"; Russia shifted into a less cooperative posture, digging its heels in on a number of minor questions, refusing to endorse the zero yield *fait accompli* and siding with China on several verification-related issues; Britain's posture remained schizophrenic, continuing to provide constructive leadership on verification issues, but following a less than cooperative track within the P-5, especially over entry into force, happy to let Russia, China, and others (such as Pakistan and Egypt) slipstream behind the UK's stringent proposals.

By the end of 1995, the CD was struggling with a 97-page rolling text with more than 1200 pairs of brackets, indicating disputed text.⁷⁸ Much of the technical work was accomplished, but heavy political clouds were massing on the horizon. The winter of 1995 witnessed two events that carried ominous seeds of destruction towards the CTBT: accusations that India was preparing to conduct a nuclear test in Rajasthan (and counter-accusations about US spying and lying); and a US Department of Energy announcement about starting subcritical tests in Nevada.

India Prepares to Test

India's nuclear weapon programme came under the spotlight as a US Intelligence report was leaked to the press in December, giving information of probable nuclear test preparations at the site at Pokharan where India had conducted a nuclear explosion in 1974.⁷⁹ After several days of intense media speculation in India and the

United States, India's Foreign Minister, Pranab Mukherjee, sought to put the matter to rest by categorically denying that India was preparing to conduct a nuclear test.⁸⁰ Embarrassed, Prime Minister Narasimha Rao, ordered the work to be halted. It later transpired that Rao had authorised the preparations in Rajasthan to appease the weaponeers (and their advocates among a close and influential coterie of strategic analysts and pundits), but had not yet given permission for any tests to be conducted. Information about what really happened did not emerge for some years⁸¹, and opinion among CD delegations in the winter of 1995-96 was divided about whether to believe the American reports or the Indian denials. The accusations touched off a public debate in India, fanned by a hotly contested election campaign, in which opposition to a CTB (and the NPT), the retention of a fully flexible nuclear weapon option, and the right to conduct nuclear explosions came to be equated with Indian independence and status by the Bharatiya Janata Party (BJP).⁸²

DOE Announces US Subcritical Tests

From the beginning of negotiations, some nonaligned negotiators had expressed the fear that the nuclear powers might use technological advances to circumvent the purpose of a CTBT. Miguel Márin Bosch, freed of the restraints he'd carried as NTB Committee Chair in 1994, stated the case thus: "Testing by explosions has lost much of its value [at least for Russia and the United States]... because of scientific and technological advances in the field of computer simulation and so-called laboratory experiments. Hence their unilateral moratoriums and hence also their call for a CTBT. What is occurring now with regard to nuclear testing, is no different from what has been happening in the disarmament field for years: the technologically more advanced nations reach a point where they can discard a certain weapon or weapon-related activity and then they move to ban that weapon or activity for the rest of the world through a multilateral treaty."⁸³

Pakistan's ambassador, Munir Akram, quoted Márin Bosch's analysis back to the CD in August 1995, as he condemned the assertions made by France (in justifying breaking its moratorium) and the United States (when committing itself to the zero yield scope). Pakistan objected that "the assertions of the nuclear weapon states that a CTBT cannot prejudice the operational credibility and reliability of their nuclear weapons arsenals are... incompatible with the original objectives of a comprehensive

test ban treaty.”⁸⁴ Notwithstanding Akram’s complaints, the concerns of many CTBT negotiators had been considerably allayed by the zero yield decision. To reinstall public and NNWS confidence that had been shaken by the French testing decision had been an important objective of Clinton’s zero yield announcement, which was also intended to end the P-5 wrangling on ‘activities not prohibited’.

It was ironic, then, that the DOE in November 1995 revived the NNWS’ scepticism with a bald announcement that the United States would be commencing in June 1996 a programme of subcritical tests on nuclear warhead components.⁸⁵ The announcement, which even acknowledged that the tests would contain small quantities of weapons grade plutonium, was so clumsily managed that it caused speculation among Washington insiders that it was a sabotage attempt, engineered by opponents of the treaty in the US laboratories. The US ambassador in Geneva did his best to reassure CD members in private, but the effect of the announcement was to dissipate much of the positive political glow from the zero yield victory of the previous summer and erode confidence in the significance of the zero yield decision on nuclear weapon modernisation.⁸⁶

1996: Conflict and Chaos as Negotiations are Finalised

The 50th UN General Assembly adopted the annual CTBT resolution without a vote, giving a political boost to the final phase of negotiations. The resolution called for the negotiations to be concluded as “a task of the highest priority”, and urged the CD to complete the final text of the treaty not later than June 30.⁸⁷ As delegations reconvened in Geneva in January 1996, three issues dominated the final stage of the CTBT negotiations:

- whether the treaty should include language explicitly ruling out the qualitative development of nuclear weapons (related to the broader question of how the CTBT should be linked with the wider goal of nuclear disarmament);
- how difficult the conditions for triggering an on-site inspection should be, and whether national technical means were permissible as evidence backing an OSI request; and

- what conditions would have to be met before the CTBT could enter into force – particularly whether to specify in some way that the signature and ratification of certain countries would be required.

Underlying these three issues were deep divisions between the interests of the P-5, the D-3 and the NNWS. In the aftermath of the US decision to base scope on zero yield and the French decision to conduct a final series of tests to ready its laboratories for maintaining the French arsenal without nuclear testing, the P-5 dynamic had shifted. For India and China, who had entered the negotiations in 1994 without having taken definite political decisions to sign up to the CTBT, 1996 was crunch-time, when this challenge could no longer be avoided or delayed. As described below, China chose to commit to the multilateral treaty it had participated in negotiating, and so sought compromise solutions to its outstanding problems over scope and verification. India, for its part, decided to defect. Using a combination of linkage, hide-and-seek, and best-versus-good tactics, India laid the groundwork for evoking the moral high ground as it rejected the CTBT in order to comply with domestic pressures to keep its nuclear options open.

On June 17, 1996, the pool of formal negotiators was dramatically increased from 38 to 61, as the CD finally managed to get consensus for its long-awaited enlargement.⁸⁸ This meant that Israel, one of the D-3 targets of the treaty, was able to participate formally in the negotiations, just in time for some difficult decisions on areas with particular sensitivity for Middle Eastern states, including on-site inspections and the executive council, including regional allocations and decisionmaking processes.⁸⁹

Configuring the Endgame

Faced with more than 1,200 brackets in the rolling text, it was clear that the CD would have to change the form and conduct of its negotiating processes if it wanted to conclude the treaty by the end of 1996. There was again an attempt by Australia to have its highly competent and committed CD ambassador, Richard Starr, nominated to chair the final year of negotiations. His nomination was supported by a number of other delegations, nonaligned as well as Western, who felt that successful finalisation of the treaty would require strong leadership, capable of standing up to the NWS and other difficult delegations. Despite adopting a more constructive approach in the

second half of the negotiations, France objected to the Australian candidacy even more strongly than the year before and manipulated the EU to throw its weight behind the previous year's chair of Working Group 2, Jaap Ramaker.⁹⁰ France's rejection of Starr in late 1994 because he was too active on behalf of the test ban (at a time when France's strategy was for delay), appeared to have been exacerbated during 1995 by Australia's strongly expressed opposition to the resumption of French testing in the Pacific. Although many others, including the United States and Britain, would have been happy to see Australia chair the NTB Committee in 1996, they considered it counterproductive to try to override the French hostility, and were, in fact, quite comfortable with the choice of Ramaker, who was regarded as a known quantity and a "safe pair of hands".⁹¹

Between January and May 1996, Ramaker convened the two working groups and appointed several Friends of the Chair for the key issues. After May, the working groups were suspended and Ramaker coordinated the negotiations directly, retaining some of the Friends of the Chair as 'moderators'. Once again, Western representatives dominated the decisionmaking processes, particularly on technical issues, as illustrated in the structure of negotiations for 1996:

Nuclear Test Ban Committee Chair: Jaap Ramaker (Netherlands, Western Group)

Working Group 1 on Verification

Chair: Grigori Berdennikov (Russia, Eastern European Group)

Friend of the Chair on Technical Verification: Peter Marshall (UK, Western Group)

Friend of the Chair on On-Site Inspections: Mark Moher (Canada, Western Group)

Friend of the Chair on IMS: Patrick Cole (Australia, Western Group)

Friend of the Chair on IDC: Ralph Alewine (USA, Western Group)

Friend of the Chair on Associated Measures, transparency and confidence-building: Richard Ekwall (Sweden – recently admitted to Western Group)

Working Group 2 on Legal and Institutional Issues

Chair: Mounir Zahran (Egypt, G-21)

Friend of the Chair on the Executive Council: Nacer Benjelloun-Touimi (Morocco, G-21)

Friend of the Chair on Entry into Force: Antonio de Icaza (Mexico, G-21)

Friend of the Chair on Funding: Yukiya Amano (Japan, Western Group)

Friend of the Chair on Preamble: Marshall Brown (USA, Western Group)

After May 1996, the working groups were suspended, but the following people were retained to coordinate continuing negotiations on specific issues:

Preamble and Review: Mounir Zahran (Egypt, G-21)

Host Country Agreement: Stephen Ledogar (USA, Western Group)

Preparatory Commission: Wolfgang Hoffmann (Germany, Western Group)

[subsequently, Don Sinclair (Canada, Western Group)]⁹²

CTBTO: Nacer Benjelloun-Touimi (Morocco, G-21)

IMS: Richard Starr (Australia, Western Group)

Three statements to the CD plenary during the first week of 1996, from the United States, India and Pakistan, kicked off the session by representing the principal themes and issues of contention in the endgame. To the relief of many, France ceased testing by the end of January, having conducted six of the originally announced eight explosions. As a mark of its commitment to the CTBT, France also pledged to dismantle its Pacific test sites at Moruroa and Fangataufa.

John Holum, the Director of ACDA, read a statement from President Clinton reiterating the CTBT's promise of "a true-zero-yield comprehensive test ban treaty that will endure for all time" and pledging the "full and energetic support of the United States to conclude promptly a treaty so long sought and so long denied". In a statement some viewed as an attempt to recover the ground gained by the zero yield decision in 1995 and then lost a few months later by the ineptly handled DOE announcement regarding future subcritical testing, Holum emphasised the real constraints which a CTBT would impose on the US weapons programmes, stressing that the NWS would not be able to pursue new or advanced nuclear weapon technologies and that the test ban would "sustain today's trend toward smaller nuclear arsenals with shrinking roles in national defenses."⁹³ Despite Holum's assurances, the DOE's announcement about conducting subcritical tests fuelled critical statements during the first weeks of the 1996 session, most notably from Pakistan, Sri Lanka, and Egypt and added grist to the mill of India's nuclear strategists.⁹⁴

India: Raising the Stakes or Moving the Goalposts?

For many years India had managed to hold two contradictory positions with regard to nuclear weapons: as a nonaligned movement leader it had been at the forefront of calls for nuclear disarmament; as a regional power, it had developed a nuclear weapon programme whose options, combined with ambiguity about sophistication and weaponisation, provided a 'recessed deterrent' and nationalistically perceived status at relatively low cost. The test ban threatened the precarious balance between these postures. India was being forced to decide whether it would give up its nuclear

option, a position perceived as allowing China's NWS superiority to be institutionalised permanently; or, alternatively, whether it should move beyond ambiguity by testing, displaying its nuclear prowess and overtly weaponising.⁹⁵ During late 1995, India seemed to come to its decision, with disastrous consequences for the test ban treaty, as the following section describes.

US intelligence reports on nuclear test preparations at Pokharan during the winter intersessional period had provoked expressions of concern and demands for explanations from India in the CD and elsewhere.⁹⁶ India's response was a defiant statement to the CD plenary and the submission of three working papers within the first 10 days of the 1996 session. Obliquely referring to the subcritical tests and castigating the NPT extension as "legitimising the possession of nuclear weapons by a few states and their possible use as a currency of power", India's Ambassador, Arundhati Ghose, who had replaced Satish Chandra the previous summer, remarked dryly that 1996 would be "a testing time for all of us".⁹⁷ India's proposals linked the treaty's preamble and entry into force with commitment to a timetable for nuclear disarmament, and also contained explicit language on preventing qualitative developments or advanced new weapons systems.⁹⁸ The proposal linking entry into force with nuclear disarmament, to be accomplished within ten years (specified), was viewed with particular consternation, even by nonaligned colleagues who also supported nuclear disarmament.⁹⁹

That India would push for language on a timetable for nuclear disarmament was not unexpected. Atal Behari Vajpayee, at that time a Member of Parliament and included on the Indian delegation to the UN First Committee in October 1995, had made an uncompromising, if at times contradictory, statement arguing that the indefinite extension of the NPT – "a major, if flawed, disarmament treaty" – had "legitimised for all time" the nuclear arsenals of the P-5. He continued: "Developing new warheads or refining existing ones after a CTBT is in place, using innovative technology, would be as contrary to the spirit of CTBT [sic] as the NPT is to the spirit of nonproliferation." Arguing that the CTBT should be "an integral step in the process of nuclear disarmament". Vajpayee stated that the test ban's scope should cover "complete cessation of nuclear tests by all states in all environments and for all time" and that the treaty must "contain a binding commitment to take further

measures, within an agreed time-frame, towards the total elimination of nuclear weapons.”¹⁰⁰

CD negotiators had therefore expected India to propose strong disarmament language for the preamble, where it would have received support from the rest of the G-21. Instead, and to the surprise of the G-21, India sought to attach the nuclear disarmament timeframe as a condition of CTBT entry into force. India’s employment of linkage with high minded rhetoric on disarmament (a combination of game-changing tactics and hide-and-seek), was deemed by many to be the first clear sign that India wanted a get-out clause. Although India’s representatives insisted that the proposals and target dates were negotiable, it appeared that, in mounting its challenge in this way, India was deliberately creating conditions to justify rejecting the treaty later on. India’s assumed objective of keeping its nuclear option open was barely concealed, and became a topic of corridor discussion in Geneva.¹⁰¹

Critical Adjustment: Russia, Pakistan et al

Other states also adjusted their positions early in 1996. Russia’s statement surprised the American delegation, which had grown accustomed during the early negotiations to a cooperative, even quiescent Russian partner. Drawing attention to perceived anomalies in the verification system, an issue that had become more important to Russia after the zero yield decision, Berdennikov demanded “identical transparency” and “equal terms for monitoring existing nuclear test sites”. He restated Russia’s long held positions on the necessity for an entry into force provision strict enough to contain the P-5 and D-3, and on on-site inspections and the use of “national monitoring facilities”, where Russia wanted greater restrictions “to avoid abuse” than the United States favoured. Most notably, Berdennikov’s statement opened with a political overview in which he accused the NATO expansion plans of “poisoning the whole international climate” including arms control. He also took issue with India’s attempts to link the CTBT to a timetable for disarmament, saying that such a position made work to conclude the CTBT substantially more difficult. He castigated those, with specific reference to India, who had likened the indefinite extension of the NPT with indefinite possession of nuclear weapons, saying “the indefinite extension of the NPT is not some sort of licence for the perpetual ownership of nuclear weapons for anyone at all.”¹⁰²

Algeria, Indonesia and Pakistan made early and detailed policy statements. Algeria for the first time publicly stated its opposition to PNE, as well as referring to the necessity (within the constraints of verification) to leave no room for the qualitative or quantitative development of nuclear arsenals.¹⁰³ In a statement that emphasised the CTBT's purpose to cap the vertical and horizontal proliferation of nuclear weapons, Indonesia formally gave its support to the Australian scope text from March 9 1995. Unlike some of its G-21 colleagues, Indonesia's statement did not explicitly mention subcritical testing, although its continuing concerns about laboratory testing could be inferred.¹⁰⁴ Like India, Pakistan underlined the relationship between nuclear disarmament and the CTBT. In a clear reference to the US subcritical testing programme, Ambassador Munir Akram criticised attempts to continue upgrading nuclear weapons, warning that "the treaty we build [here] must not be such that it will transform those who supported the CTBT in the past into its opponents." Pakistan wanted the CTBT scope to have "no exceptions ... for any reason". The statement also went into detail on other issues, notably underlining Pakistan's opposition to national technical means.¹⁰⁵

Western NNWS were also quick to press their arguments for accelerated progress. Australia, Japan, and Sweden all made early statements. Japan stressed that the goal of a CTBT by autumn 1996 would require a clean text during the second session, necessitating agreement on the substance of the treaty by March. Despite such urging, the NTB Committee and Friends of the Chair settled into a routine of meetings and consultations, which did not appear to clear many brackets from the heavily laden rolling text. The P-5 meetings intensified in frequency and content, as the diplomats from the NWS attempted to put together a package by trading key positions and issues amongst themselves. In February, seeking to step up the negotiations by demonstrating possible solutions and areas of convergence, Iran and Australia each tabled a clean draft or 'model' text.

Draft Treaties from Iran and Australia

That Australia was preparing to offer a draft treaty, as it had done in the final year of CWC negotiations, was an open secret in Geneva. But the delegation was very discreet about what its 'model' text would contain, and some of its Western

colleagues were offended by Australia's failure to consult. By contrast, few outside the G-21 realised that Iran had also been preparing a draft treaty text. To the evident dismay of Australia, Iran got there first. Presenting his delegation's draft, the Iranian Foreign Minister Dr Ali Akbar Velayati, stressed that the purpose was to help the CD "to perceive a middle ground – a package... which may constitute a compromise amongst the various and, at times, contradictory positions."¹⁰⁶ The draft was warmly welcomed by many nonaligned delegations, although none of them had wanted to join as co-sponsors, as Iran had originally sought. India and Pakistan, however, criticised Iran within the G-21 group (but not publicly), arguing that the Iranian draft gave legitimacy to the Australian draft text, which both delegations had been gearing up to reject as soon as it was tabled.

A week later, Michael Costello, Secretary of the Australian Department of Foreign Affairs and Trade, emphasised the urgency of moving toward conclusion, and offered his delegation's model treaty to "demonstrate tangibly that a CTBT...is indeed within reach".¹⁰⁷ Although they had been expecting Australia's initiative, the reception of the text by Western group colleagues was at best ambivalent. Some expressed concern that the drafts could complicate the solutions that the Chairs and their Friends were trying to hammer out. Surprised by the moderation and pragmatism of Iran's draft, Ledogar privately remarked that on many issues he liked Iran's better than Australia's. His view was echoed by others, including the British and French.¹⁰⁸ Publicly, the Australian draft was damned by faint praise. France "welcomed the initiative that Australia, following Iran, has taken" and said that the "complete and consistent" solutions showed that the goal of concluding the CTBT by the target date was not beyond reach.¹⁰⁹ Russia said Iran and Australia's efforts "showed sincere intent to help in the negotiations"¹¹⁰ and the United States commended both drafts for demonstrating "the extent to which there is already widespread agreement".¹¹¹

Both drafts synthesised the areas already substantially agreed. There were also noted similarities in their conceptual approach to resolving some of the most difficult issues such as entry into force, on-site inspections, and the composition of the executive council. This "near coincidence" was noted by Ambassador Sirous Nasser, using the tabling of Australia's draft as an occasion to remind the CD that Iran's initiative had been equally comprehensive, and earlier.¹¹²

The fundamental difference between the two was on scope. Australia reproduced its own working paper on scope, originated in March 1995, with the understanding of zero yield adopted by the US, France and the UK in August.¹¹³ Iran's draft reintroduced the prohibition against all nuclear weapon tests, despite Indonesia's withdrawal earlier that month of its June 1995 proposal on this.¹¹⁴ Although insisting that it did not itself favour PNEs, Iran offered a previously unconsidered approach on this, seeking to give the Conference of States Parties responsibility for considering a specific request for conducting a PNE "in exceptional circumstances and in the case that the real benefit of nuclear explosions for the sole purpose of purely peaceful scientific research and civilian applications are demonstrated..."¹¹⁵ The Australian model unequivocally banned all nuclear explosions, making no distinction between military and non-military purposes.

With regard to the preamble, Iran retained a commitment to nuclear disarmament in a timebound framework, which Australia eschewed in favour of NPT-related language referring to a "systematic process" leading to nuclear disarmament. For entry into force, both attempted to balance early implementation of the treaty with its political credibility. Each proposed that entry into force should be based on accession by a particular list of states that included *inter alia* the P-5, India, Israel and Pakistan, but with a mechanism to prevent any particular country on the list being able to block the treaty or hold it hostage. Australia proposed ratification by all CD members plus observers, with a waiver conference after two years. Iran proposed ratification by at least 65 of the 68 States on the IAEA list of countries with nuclear technologies.

On OSI both proposed a two phase process with quick access for the first, less intrusive phase, and a more rigorous decisionmaking procedure for any subsequent, fuller inspection. Australia permitted any kind of information to be used to back an OSI request, but also considered ways of making national technical information more accessible to the international community to meet nonaligned states' concerns about bias. Iran would base an OSI request solely on data from the IMS, but left a small opening for NTM as supplementary information.

Many diplomats expressed gratification (and some surprise) that both texts were conceptually so similar. While some worried that the texts would narrow the Chair's room to manoeuvre, rather than assist him, China, India and Pakistan made the strongest objections, insisting that the drafts must not be allowed to pre-empt the rolling text.¹¹⁶ Although Australia was disappointed with the reception to its draft text and the fact that it was not sufficiently distinguished from Iran's initiative, both drafts were generally welcomed as a useful, perhaps even necessary, mechanism to pave the way for a Chair's text. Having let the Iranian and Australian drafts test the waters, Ramaker decided not to introduce a clean Chair's draft text at this point. Choosing instead what he characterised as a two-stage process, on March 28 Ramaker tabled a working paper with an "Outline of a draft Comprehensive Nuclear Test Ban Treaty".¹¹⁷

March 28: Chair's 'Outline'

The Chair's outline was structured as a treaty, with a preamble and 17 articles, but it had not been cleaned of brackets. Where states' individual proposals were hard fought, such as on scope, Ramaker presented the heavily-bracketed rolling text, together with an indication of a clean formulation that had attracted wide support, in this case the Australian text. In other cases, such as the composition of the Executive Council, the working paper offered text developed by a Friend of the Chair after consultations with the delegations. Four bracketed articles were put at the end, covering China's proposals on the peaceful use of nuclear energy, PNEs, security assurances and the relation of the treaty to other international agreements. By this time, China's proposal on PNEs was opposed altogether; other articles, such as security assurances, may have been supported in principle by many among the nonaligned, but not within the context of the CTBT. By attaching them onto his Outline Paper in this way, Ramaker provided a strong indicator of the general view that these proposals should not remain in the treaty, while at the same time meeting China's insistence that its decision on these issues could not be pre-empted by others.

In his statement to the final meeting of the Nuclear Test Ban Committee before the Spring break, Ramaker highlighted six outstanding issues: the preamble; scope; the composition of the Executive Council; some of the functions of the international data centre (IDC), particularly the level of information and analysis it should provide to

states parties; on-site inspections; and entry into force. He gave the Committee the six weeks of the intersessional break to consider the structure and various options.¹¹⁸ Two weeks after the CD resumed in mid-May, Ramaker tabled a clean draft treaty.¹¹⁹

May 28: Chair's First Draft

On May 23, the day after Ramaker announced that he would shortly be tabling a draft treaty from the Chair, Munir Akram warned that "A treaty which descends from heaven or elsewhere may arrest rather than accelerate our negotiations and the fulfilment of our deadline". Pakistan's protests were joined by India, Russia and China. Ramaker sought to reassure those delegations by stressing that his draft was to facilitate "the last and final stage of negotiations".¹²⁰ As it turned out, the Chair's text was neither rejected nor called premature when it was presented on May 28, 1996. Despite the reluctance of some, there was a shared recognition that if the CD was to make the target date identified in the UN General Assembly resolution 50/65, then the Chair could not delay any longer in putting down a clean draft text.

A few diplomats complained that the draft overly represented the "Western perspective", while at the same time the United States and Britain grumbled that the verification provisions leaned too far towards the positions of G-21 states. India raised vociferous objections that none of its positions had been incorporated, while other nonaligned countries welcomed provisions which they felt could provide some leverage to keep the NWS up to their obligations, though they admitted the language was not as strong as they would have liked.¹²¹

Two particular issues took centre stage as a result of the Chair's text: entry into force and on-site inspections. During the next month, meetings of the NTB Committee went late into the night, but without achieving much. Mounir Zahran of Egypt, coordinating negotiations on the preamble, managed to obtain agreement for India's proposal that the Review Conference should also ensure that the objectives and purposes of the preamble were being realised. That was the only language proposed by India in January that was accepted into the treaty. The Western diplomats had dismissed India's proposal regarding a timetable for nuclear disarmament as a tactic to prepare the ground for refusing to sign, and so barely engaged with attempts by India and others to strengthen the preambular commitment to nuclear disarmament

and the prevention of qualitative improvements or development of advanced new nuclear weapon systems. Giving credence to the Western assumptions, India appeared unwilling to work with its nonaligned colleagues to strengthen the treaty's preamble by confronting France, Britain and the United States with a coordinated proposal (it was assumed that Russia and China would go along with any reasonable language on the preamble). India's distancing itself from G-21 initiatives in this way confirmed the view that New Delhi was less interested in getting a "good treaty" than in pandering to a strident sector of domestic opinion that wanted India to demonstrate its nuclear capability and keep its nuclear options open. Although thirteen G-21 delegations managed to unite on a four-paragraph proposal on preambular objectives and aspirations by the last week of June, they could accomplish little without either India's engagement or support from moderate Western states, who remained on the sidelines on this issue.¹²²

The May 28 draft treaty caused a significant shift in the negotiations. Although no formal decision was ever taken to replace the rolling text, Ramaker's text became the focus of work from then on. Despite his assurance that the draft had not been tabled with a "take it or leave it attitude", multilateral negotiations ceased to play a relevant role after the end of May. Under his auspices as Chair, Ramaker instead convened some fifteen key states to discuss the most difficult issues. The group included the P-5, India, Israel and Pakistan, and ambassadors from Japan, Mexico, Egypt, Morocco, Germany, Canada, Indonesia and Australia, most of which had acted as moderators or Friends of the Chair on the major issues.

On-site inspections and the related question of national technical means had been categorised as 'treaty-breakers' by the US and China, a term used to signify that the country in question would reject the treaty if it did not get what its national policy had determined as necessary. These two issues therefore became the main focus of the P-5's side-bar meetings. For others, the entry into force of the treaty had begun to cause anxiety, especially in light of the strident, largely pro-nuclear media debate in India. Britain, China and Russia were presenting their demand for a provision that would bind the "five plus three" declared and undeclared nuclear weapon states, as non-negotiable. The United States was preoccupied with ensuring that inspections would not be subjected to too-rigorous conditions, and despite the size of its delegation

appeared unable to keep its eye on any other ball. Although Washington would have preferred a more flexible provision on entry into force, and France had come round to this position, both failed to pay sufficient attention to the hostage-taking dangers of an overly stringent article until too late. Though Ramaker had intended his draft text to replace the rolling text as the basis for the final phase of negotiations, he had not expected to be locked into the draft's language so fully or so quickly. This miscalculation was most acutely problematic with respect to entry into force.

Under severe political pressure from Britain and Russia, and believing Russian threats to reject the Chair's draft text, unless the entry-into-force provision met the stringent P-5+D-3 formula, Ramaker had inserted an informal British suggestion on entry into force into his May 28 draft text. The British formula, one of many that the delegation had suggested but not formally proposed, made entry into force contingent on signature and ratification by 37 countries listed as providing either a primary seismic station or a radionuclide laboratory to the IMS. As will be discussed more fully in chapter 8, Ramaker intended this paragraph as a holding article, anticipating further intensive negotiations that would result in a less stringent, modified requirement. Unfortunately, the reactions of Russia and India escalated the debate over entry into force in opposing directions. First, Berdennikov declared that he was satisfied with the stringent entry into force article and regarded it as final. Soon after, as two additional countries made a nonsense of the list provision by adding stations to the IMS, India denounced the pressure that it felt was being exerted by some of the P-5 and announced that it would withdraw its seismic stations. Given the hard work put in by one part of the British delegation to gain acceptance and participation for the IMS, it was sadly ironic that the incorporation of Britain's badly considered entry into force tactic resulted in India withdrawing its stations from the IMS altogether.¹²³

June 20: The Die is Cast

The majority of negotiators disliked the strict, hostage-taking entry into force approach, but they seemed incapable of preventing its inexorable slide into the final treaty. Although speculation regarding India's intentions and tactics had been high throughout 1996, many CD members now regard June 20 as a turning point that sealed the treaty's fate. In the morning, Ambassador Ghose gave a speech in the CD plenary, in which she underlined India's conditions for joining the CTBT in terms of

timebound disarmament commitments. She also conveyed an unmistakable warning that India was preparing to exercise its veto unless the entry into force provision was made less specific. Secondly, a late night session of the NTB Committee convened under the auspices of Antonio de Icaza, the Mexican ambassador responsible for entry into force, turned sour following a bitter exchange between Sir Michael Weston and Arundhati Ghose, in which Weston asserted that India was “wriggling on the end of a hook”. As tempers frayed, Weston also offended Japan and Germany, who opposed the stringent list-based entry into force requirement, telling them that since the CTBT was essentially a nonproliferation measure aimed at the P-5 and D-3, their role was only to pay for it.¹²⁴ The discussion that ensued seemed to poison the entire debate over entry into force and further served to personalise and polarise the divisions between key protagonists. Ramaker had that day tabled a working paper on entry into force containing a complicated, four-stage process which he had hoped would appease Britain, China and Russia, while removing the risk of a permanent Indian veto on the treaty. In a tragedy of timing, his proposal fell victim to June 20’s poisoned negotiating environment, and was barely considered.¹²⁵

The United States, though among those who disliked the strict provision, preferring a condition based on ratification by the P-5 plus a simple number of other states, had been prepared to use it as a bargaining chip. During the P-5 sidebar negotiations, the US delegation indicated that it would support Russia and China’s demands in return for greater Russian and Chinese flexibility over on-site inspections, which Washington had characterised as a ‘treaty-breaking’ issue. Failing to get agreement on this P-5 package, the United States shifted again, publicly opposing the list of 37 just as India withdrew its IMS stations. But the fact that the United States had first underestimated the entry into force issue and then been prepared to bargain with it undermined any belated hope that the US delegation would rally support for an alternative proposal.

Ghose’s statement to the CD on June 20 was a superb example of diplomatic judo, manipulating fact, perception and threat to create an impression of the inevitability of the throw. She positioned India for defection, distracting attention from her country’s nuclear ambitions by focusing on the failure of the NWS to disarm or reduce their core reliance on nuclear weapons; then she couched India’s familiar linkage

arguments in terms of national security, so that New Delhi's justifications for rejecting the CTBT could be cast as a response to threat and the fault of others, principally the NWS. Ghose's statement set the scene for India's subsequent actions, and it is illuminating to consider in more detail the words and phrases she actually employed.

After quoting from the CTBT's negotiating mandate, Ghose asserted: "India has participated actively and constructively in the negotiations. We have put forward a number of proposals, consistent with the mandate adopted by the CD. These proposals are aimed at ensuring that the CTBT must be a truly comprehensive treaty, that is, a treaty which bans all nuclear testing without leaving any loopholes that would permit nuclear weapon states to continue refining and developing their nuclear arsenals at their test sites and in their laboratories. Through these proposals we have underscored the importance of placing the CTBT in a disarmament framework, as part of a step-by-step process aimed at achieving the complete elimination of all nuclear weapons within a time-bound framework."¹²⁶ Expressing India's disappointment with how negotiations had developed, Ghose called the scope "narrow" and said it "does not fulfil the mandated requirement of a comprehensive ban"; it was, rather, only a "nuclear-weapon-test-explosion-ban treaty". The preambular references to disarmament were too weak and "cannot meet our concerns". She listed ways in which the CTBT failed to dent the NWS' reliance on nuclear weapons, including the nuclear testing carried out by France and China during the negotiations "justified as essential for national security and for permitting completion of work on new designs and gathering of data to enable computer simulation and modelling to preserve and refine capabilities into the distant future." Ghose concluded her section on the treaty's shortcomings with the following denunciation of the draft text, signalling India's intention to defect: "The CTBT that we see emerging appears to be shaped more by the technological preferences of the nuclear weapon states rather than the imperatives of nuclear disarmament. This was not the CTBT that India envisaged in 1954. This cannot be the CTBT that India can be expected to accept."

A further paragraph drew comparisons with the NPT as a discriminatory and unacceptable treaty regime. Ghose then reiterated her criticism of the CTBT,

declaring: "India... cannot subscribe to it in its present form."¹²⁷ Finally, addressing Article XIV, she castigated the use of the entry into force provision to exert improper pressure on India to accede to the CTBT, and made it clear that India "would not accept any language in the treaty text which would affect our sovereign right to decide in the light of our supreme national interest, whether we should or should not accede to such a treaty."¹²⁸

One problem with India's declaration of intended defection was that it removed any incentive for the other negotiators to engage with India's demands. This was particularly true of the P-5, with whom India wanted to engage. By placing itself essentially outside the business of finalising the treaty text, India weakened whatever leverage the G-21 might have had in trying to get stronger disarmament commitments into the preamble. Rather than opening up opportunities for renegotiating the entry-into-force provision, the events of June 20 effectively closed them off. Ramaker was faced with pressure from Russia and the UK, supported by China, Pakistan and others, who continued to insist that the stringent provision must remain. Instead of deploying their greater numbers into effective pressure on behalf of the argument that facilitating early entry into force would be important for embedding the norm against testing and strengthening the regime's ability to constrain non-adherents, the NNWS appeared to abandon the interests of international security. When de Icaza asked if they could accept the stringent entry into force requirement, a chorus of delegations affirmed that though they didn't like it, they could live with the list. With the pressure coming only from the NWS, and with a number of other issues still to be resolved, Ramaker decided not to expend more capital in reopening negotiations on entry into force.¹²⁹

June 28: 'Final' Text

On June 28, the last day of the CD's second session, Ramaker tabled his revised version of the May 28 Chair's text, this time telling the NTB Committee that negotiations had been concluded.¹³⁰ Despite misgivings about the implications of Article XIV on entry into force, the Clinton administration decided in early July to support Ramaker's text as it was, hoping to deter any further negotiations, which they feared could cause the treaty to unravel. The United States therefore secured public declarations of support from Britain, France, Russia, Indonesia and others when

Ramaker tabled a further draft treaty on June 28, and announced that it was the final text.

When the CD resumed negotiations on July 29, the atmosphere was tense. Since the list based on IMS stations no longer served the purpose of tying India in, a combination of the IAEA's list of nuclear capable states and the newly-enlarged CD was chosen as the basis for entry into force. This formula resulted in a list of 44 states, including the P-5, India, Israel and Pakistan, whose accession was made a binding condition of the treaty taking legal effect. This stringent condition, which rendered the treaty vulnerable to hostage-taking politicking, was softened only by the offer of a conference – which Ramaker explicitly characterised as not a waiver conference – which could be convened a few years after the date of the treaty being opened for signature.¹³¹

India's strong criticisms of the emerging treaty had been echoed by Pakistan, Egypt, Iran and Nigeria. Though the P-5 were less worried about others defecting, there was a dangerous contradiction in their tactic of ignoring India while at the same time making its accession a binding precondition for the treaty's entry into force. India's sense of grievance and isolation was further exacerbated when, notwithstanding its position against any reopening of the treaty, the US agreed to China's demand for further discussions on the decisionmaking procedure for OSI. Having finally conceded on PNEs¹³², the issue of on-site inspections was a make or break issue for China. Under pressure from its allies, and with China's signature on the treaty hanging in the balance, the US conceded its hardline position and accepted a decision-making majority of "at least 30 affirmative votes" of members of the executive council as necessary before an inspection could go ahead.¹³³ China, which had continued to conduct a small number of nuclear tests throughout the negotiations, conducted its 45th explosion on July 29, 1996, and announced that from July 30 it would start a moratorium.¹³⁴

The US-Chinese decision on inspections was presented together with some procedural modifications in Ramaker's final text in working paper 330/Rev.2 on August 14. The last minute agreement may have secured China's signature, but India was furious that the June 28 text was amended at China's behest while no-one was

prepared to address India's own proposals on disarmament and entry into force. India interpreted this as a concession granted solely because China was a nuclear power, whereas India's needs and proposals were ignored because India was not. As such, this message fuelled hostility towards the CTBT throughout India, where the endgame negotiations were followed daily in the national press.¹³⁵ Other nonaligned countries had also tried to reopen negotiations on the preamble and entry into force, but were told that negotiations were closed. Frustrated at their inability to get stronger commitments in the CTBT preamble, 28 of the 30 nonaligned states in the CD proposed a "Programme of action for the elimination of nuclear weapons", intending this to be a basis for discussions in an *ad hoc* committee on nuclear disarmament.¹³⁶

Although this narrative has concentrated on the major events and decisions of the 1994-96 negotiations, it would not be complete without a brief explanation of how some of the less fundamental, but contested issues that are not addressed in the detailed chapters on scope, verification and entry into force were resolved.

The Preamble

Ramaker's treaty preamble changed little from his first draft, although the G-21 had made a last ditch, unsuccessful attempt to strengthen the treaty's objectives in this section. The preamble is the repository of the treaty-maker's political aspirations. It may become the display case for concepts that underpin the treaty, a storage site for ideas that were dropped from the body of the text, or a bland assertion of general principles that offend no-one. With the three western nuclear powers rejecting anything stronger, bland assertions won the day.

The nonaligned states had wanted the CTBT preamble to enshrine commitment to the concept of a timetable for nuclear disarmament and reflect the treaty's role in curbing vertical as well as horizontal proliferation. They were unsuccessful. The preamble opened by welcoming recent arms reduction measures and quoting from the negotiating mandate. Coordinated by Mexico, and delayed by attempts to persuade India to negotiate on a joint proposal, 13 G-21 states submitted a late amendment proposal for the preamble that would assert that the CTBT "should end the development and qualitative improvement of nuclear weapons" and be "an

indispensable step towards the larger goal of a nuclear weapon free world”.¹³⁷ The Western nuclear powers accepted some compromise language brokered by Australia and Ramaker, but made it clear that they would not negotiate on strengthening the preamble unless India gave a commitment to sign the treaty.¹³⁸

Rejecting any mention of curbing nuclear weapon development as an objective or aspiration of the treaty, the P-5 were prepared to allow the preamble to refer to “constraining the development and qualitative improvement of nuclear weapons and ending the development of advanced new types of nuclear weapons” as a *consequence* of the treaty. They also agreed to a preambular paragraph using language from the NPT decisions adopted in 1995, recognising the CTBT as a “meaningful step in the realisation of a systematic process to achieve nuclear disarmament”. France adamantly opposed Cuba’s proposals linking nuclear testing to environmental harm, perhaps fearing that formalising such linkage could make it possible for the NWS to be sued by communities downwind of or otherwise affected by their nuclear testing over the years. The nonaligned had to be satisfied with a reversed linkage noting that the treaty “could contribute to the protection of the environment”.¹³⁹

The CTBT Organisation (CTBTO)¹⁴⁰

Although there had been an early bid by the IAEA, supported chiefly by Sweden, to be given the additional responsibilities of implementing and verifying the CTBT, consensus emerged relatively smoothly for an independent organisation – the CTBTO – to be established in Vienna, independent from but co-located with the IAEA, and empowered to cooperate with the IAEA and other international organisations to “utilise expertise and resources, as appropriate, to maximise cost efficiencies”.¹⁴¹ It was then agreed that the CTBTO would comprise a Conference of States Parties, expected to meet annually, an Executive Council, and a Technical Secretariat headed by a Director-General.

The 51 seats (increased from the 45 originally proposed, following pressure from African and European delegations) were allocated from six regions: 10 seats from Africa; 7 from Eastern Europe; 9 from Latin America; 7 from the Middle East and South Asia; 10 from North America and Western Europe; and 8 from South-East

Asia, the Pacific and the Far East. The regions differ from the UN's traditionally recognised five regions, and provoked some objections, notably from Middle Eastern countries, who did not want Israel counted within their region. Israel, for its part, feared being excluded from taking up a seat on the Council, while the P-5 (echoed by the D-3) wanted permanent seats on a council that might sit in judgment on them. A formula for seat allocation was agreed whereby one seat per region would be allocated by alphabetical rotation; one third of the seats per region would take into account certain criteria, including political and security interests, relevant nuclear capabilities, IMS facilities and expertise, and budgetary contribution to the CTBTO; the rest would be decided regionally by either election or rotation. The formula was intended to provide equitable regional participation, ensure that no state could be permanently excluded, and give states which regarded themselves as treaty targets or major players the assurance of continuous seats on the council, while avoiding the political and discriminatory overtones of giving "permanent" seats to the P-5 or D-3.

Bypassing India's Veto

When Ramaker sought consensus in the NTB Committee for the August 14 treaty text, India carried out its threat to veto the draft treaty. Omitting the treaty text, Ramaker managed to persuade India to allow the report to be transmitted from the Committee to the CD on August 16. In addition to the standard description of activities, personnel and documentation related to the Committee, the report contained interpretations and assurances from the Chair on several issues in the draft treaty. For the benefit of India, he clarified that Article XIV on entry into force did not impinge on a state's sovereign rights and that measures which could be undertaken to accelerate the ratification process did not mean UN Security Council sanctions under Chapter VII of the UN Charter. For Iran, which had objected to Israel's inclusion in the Middle East region, he clarified the CTBT-specific relevance of the six-region basis for determining the composition of the Executive Council. To reassure those concerned about possible abuses of national technical means and on-site inspections, Ramaker made statements on the record regarding the limitation of inspections to the treaty's subject matter and various safeguards in the treaty against the violation of a state's sovereignty and potential abuse of national technical means.

Unusually, the report also contained a summary of some 18 statements of position on the CTBT. These statements ranged from the generally supportive (Australia, on behalf of 39 mostly Western and Eastern European states, including the P-5, Israel and four G-21 states; further separate statements from China, Canada, Kenya and Belgium), through critical but not opposed (G-21 members Egypt, Mexico, Brazil, Algeria, Cuba, Colombia, Viet Nam, Pakistan, Peru), with two countries expressing opposition (India and Iran).¹⁴² Notably, though Iran shared various G-21 states' criticisms of the treaty's inadequacies with regard to disarmament, national technical means, and the regional composition of the Executive Committee, its opposition to attaching the draft treaty text to the NTB Committee report seemed to rest chiefly on the view that the negotiations had not been properly concluded. Stating that "the appalling fact here is that failure could be avoided" and that the remaining issues could be resolved, Iran tried unsuccessfully to propose further amendments.¹⁴³

India continued to refuse to allow the treaty text to be attached in any way, even though the report now clearly stated that there had been no consensus. In a last ditch attempt to undermine the credibility of the treaty, India, supported by Iran ostensibly on procedural grounds,¹⁴⁴ then also blocked transmission of the NTB Committee's report to the UN General Assembly, even though the treaty text was not attached. There was a sudden, panicked flurry of activity from Western states, who had not anticipated this final obstacle from India.¹⁴⁵ Some sought to assure India that it would not be coerced into signing the treaty as long as it did not block its transmission to the General Assembly, a doomed strategy of appeasement, according to Pakistan's Ambassador Munir Akram.¹⁴⁶

Nothing worked, and with a graceful speech thanking his colleagues, Ramaker handed responsibility for the treaty to the CD when he presented the NTB Committee Report on August 20.¹⁴⁷ The only other speakers at that plenary were Ghose and Akram, underlining how the fate of the CTBT had become hostage to South Asian politics and regional rivalries. Ghose elaborated India's by-now excruciatingly familiar arguments against the treaty. To these were added self-justifications for vetoing not only the treaty text, but adoption of the NTB Committee report as well, and claims that the CD "has no text of a CTBT to recommend to the General Assembly at this time".¹⁴⁸ With every appearance of enjoyment, Akram attacked

India for “hypocrisy” and said: “Today the mask of the smiling Buddha has been torn off, revealing the face of the goddess of war. The leaders of our neighbour have proclaimed that they will keep their nuclear options open, that they reserve the right to conduct nuclear tests; that they will go ahead with their short- and medium-range missile programmes.”¹⁴⁹

After several unsuccessful attempts to persuade India and Iran to allow the NTB Report to be adopted by the CD and transmitted to the United Nations, the CD met for its August 22 plenary, rife with rumours and tense with anxiety and expectation. In a statement brimming with anger, Richard Starr announced Australia’s intention “to work with friends of the CTBT to fulfil the goal of the 50th General Assembly of a completed text, endorsed and ready for signature by the 51st Assembly this year.” He pointed out that the report they were all arguing about was “a report shorn of a text... despite an overwhelming majority willing to accept the text, despite perceptions of [its] imperfections”.¹⁵⁰ A few hours later in New York, the Australian Ambassador to the United Nations in New York, Richard Butler, requested the UN Secretary-General to arrange for the General Assembly to convene in plenary on September 9 to take action on the CTBT, pursuant to UN resolution 50/65 (December 12, 1995).¹⁵¹ Australia followed this up with a resolution initially co-sponsored by some 50 states, to adopt the CTBT as contained in A/50/1027.¹⁵² By means of a late manoeuvre carried out by Belgium in the closing moments of the August 22 plenary, the draft treaty text was turned into an official CD document.¹⁵³ India’s main objection to the NTB Committee report was therefore thwarted when Australia requested that this CD document be given status as a UN document, and attached to the resolution proposing its adoption by the General Assembly.¹⁵⁴ Although there had been widespread support for the CD to transmit the draft treaty to the General Assembly, many nonaligned countries expressed anger and dismay when Australia took the initiative to bypass the CD’s veto, apparently viewing the action as a violation of the CD’s independence, autonomy and rules of procedure.

The United Nations Adopts the Treaty

On September 9, with 127 co-sponsors, Australia’s resolution to adopt the CD as finalised in Geneva was put to the UN General Assembly. Almost all the statements

made during the next two days were in support of the treaty, although many also spoke of its flaws. Criticism focused on four main features: concern that the treaty did not adequately prohibit non-explosive testing or prevent qualitative development; the need for more progress on nuclear disarmament, with references to the G-28 programme of action, timebound framework, and the July 1996 advisory opinion of the International Court of Justice on the use or threat of use of nuclear weapons¹⁵⁵; concern about the treaty's entry into force, including prophetic fears that its rigidity "virtually guaranteed indefinite hibernation"¹⁵⁶; and the distribution of Executive Council seats, complaints about which were mainly a vehicle for some of the Arab countries to object to Israel being part of the Middle East and South Asia region. A significant number of nonaligned states also expressed concern that this particular bypassing of the CD should not set a precedent and should not be allowed to undermine the CD in any way.

Pakistan supported the resolution, but explained that it would not sign the treaty until its regional situation warranted.¹⁵⁷ India argued that the negotiations had been "skewed" and the treaty would "only succeed in perpetuating a discriminatory status quo".¹⁵⁸ Prior to the UN debate, there had been real concerns that India or Iran might try to amend the treaty, and in fact India initially submitted a resolution containing amendments to the treaty's preamble, scope, and Article XIV on entry into force.¹⁵⁹ The co-sponsorship of the CTBT resolution by more than two-thirds of the UN membership ensured that any amendment strategies were abandoned. When the vote was taken at 4 p.m. on September 10, the CTBT was endorsed by 158 votes to 3. India, Bhutan and Libya voted against.¹⁶⁰ There were 5 abstentions: Tanzania, Cuba, Syria, Lebanon, Mauritius. Libya and the abstainers explained their position in terms of dissatisfaction with the negotiating process and objections to Israel's inclusion in the Middle East region. Additionally, 19 countries were counted as absent.¹⁶¹ Ghose gave a final, angry statement, declaring "that India will never sign this unequal Treaty, not now, nor later. As long as this text contains this article [XIV]...this Treaty will never enter into force."¹⁶²

September 24: Open for Signature

Opening the CTBT for signature at the United Nations on September 24, UN Secretary General Boutros Boutros Ghali saluted the citizens and those who had “struggled for so long to achieve this treaty.”¹⁶³ He spoke of the “constant and passionate flow of petitions, appeals, and support from the peoples of the world,” and appealed to all signatory states to ensure that they conformed with the purpose of the treaty.

Calling the treaty “the longest sought, hardest-fought prize in arms control history”, US President Bill Clinton was the first to sign, using the pen with which John F. Kennedy had signed the PTBT in 1963. Clinton described the CTBT as “a giant step forward” that would “help prevent the nuclear powers from developing more advanced and dangerous weapons.”¹⁶⁴ Russia’s Minister of Foreign Affairs, Yevgeni Primakov, said the treaty “would stimulate a gradual transition to nuclear disarmament.” He also warned: “Testing of a nuclear explosive device by any country before the treaty enters into force will cardinaly change the international situation, greatly prejudice the treaty itself, and may compel many countries to revise their attitude to it.”¹⁶⁵ Foreign Minister Qian Qichen reiterated China’s view that a CTBT was “only a first step in the entire process of comprehensive nuclear disarmament” and called for all the major nuclear powers to renounce their policies of nuclear deterrence, commit to no first use of nuclear weapons and give legally binding undertakings not to use nuclear weapons against non-nuclear weapon countries. China also advocated the withdrawal of nuclear weapons to the home territory of the NWS themselves and pressed for the commencement of negotiations leading to a convention on the complete prohibition and thorough destruction of nuclear weapons.¹⁶⁶ The French Minister of Foreign Affairs, Hervé de Charette, called the CTBT a “major turning point in the world’s strategic balances” and said it opened the way to “a more stable, safer world which will cease to be haunted by the twin dangers of the nuclear arms race and the proliferation of these weapons.”¹⁶⁷ Britain’s Foreign Secretary, Malcolm Rifkind, was notably less enthusiastic in his comments, remarking that the CTBT showed that “we can, by acting with determination and by making sacrifices, reap the benefits of the end of the Cold War.”¹⁶⁸

By the end of the first week, some 70 countries had signed the CTBT, including Israel and Iran. By March 7, 1997, when Geneva handed the treaty over to Vienna, the host city for the CTBTO, the test ban treaty had 142 signatories.

Notes

¹ Report of the Ad Hoc Committee on a Nuclear Test Ban, August 24, 1993, CD/1220.

² The decalogue, as it came to be known, was based on UNSSOD I's Programme of Action. *The United Nations and Disarmament: A Short History*, (New York: United Nations, 1988). See also chapter 2.

³ Most of this narrative relies on my own weekly reports and informal meetings with delegations and officials, as outlined in Chapter 1.

⁴ *Mandate for an Ad Hoc Committee under Agenda Item 1, "Nuclear Test Ban"*, January 25, 1994, CD/1238.

⁵ See Chapter 4 for a discussion of the Mexican strategy at the 1990 NPT Review Conference.

⁶ See Chapter 4. "Britain Scores First on Rumbling Tests", *The Guardian*, October 6, 1993; "China Explodes Nuclear Device despite US plea", *The Financial Times*, October 6, 1993. See also Dingli Shen, "China", in Eric Arnett (ed.) *Nuclear Weapons After the Comprehensive Test Ban* (Oxford: Oxford University Press/SIPRI, 1996) pp 24-30.

⁷ According to a senior Chinese official, who preferred to remain anonymous here, there was a continuing debate between the military and political establishments and no definite decision had yet been taken on whether to join the CTBT or not. Interview by the author, Beijing, October 13, 2000.

⁸ Sir Michael Weston, January 25, 1994, CD/PV.666. Emphasis in the original. This so-called reverse linkage originated in a statement by Paul Lever CMG, UK Assistant Undersecretary of State at the FCO, in a statement to the CD plenary on August 26, 1993, CD/PV.663.

⁹ Quoted from informal translation, in Rebecca Johnson and Sean Howard, *A Comprehensive Test Ban: Disappointing Progress*, ACRONYM 3 (London: The Acronym Consortium, September 1994), p 10.

¹⁰ Sweden updated the draft CTBT it had first proposed in 1984, and tabled again in 1991 and in 1993. Australia first issued a 'draft structural outline' for a CTBT and then circulated a 'non-paper', which was published as a "Resource Paper on draft treaty elements" on March 30, 1994, with accompanying notes. The Australian non-paper built on the Swedish drafts of 1991 and 1993 and incorporated ideas from the recent experience of the 1993 Chemical Weapons Convention, especially with regard to verification provisions. Canada took its familiar role of promoting wider understanding of the technical and political aspects of verification by drawing attention to the papers it had circulated the previous year on "verification synergies". See Permanent Representation of Sweden to the CD, *Draft comprehensive nuclear test ban treaty and annexed protocol*, December 6, 1993, CD/1232. See also Sweden's *Draft comprehensive nuclear test ban treaty*, July 31, 1991, CD/1089; and June 3, 1993, CD/1202; Permanent Representative of Australia, *Draft Structural Outline*, January 5, 1994, CD/1235; Australian *Resource Paper on Draft Treaty Elements*, 30 March 1994, CD/NTB/WP.49, and *Explanatory Notes* CD/NTB/WP.50; and "Constraining Proliferation: the Contribution of Verification Synergies", transmitted in a letter to the CD from the Permanent Representation of Canada, June 3 1993, CD/1201.

¹¹ Pande cites Mexico as one of the prime supporters of Article V during the final stages of NPT negotiations, together with Sweden, Romania, Nigeria and the UAR. Savita Pande, *The Future of NPT*, (New Delhi: Institute for Defence Studies and Analyses, 1995) p 13. By 1994, however, Mexico was leading the majority of nonaligned states in rejecting PNEs, summed up by Márin Bosch thus: "peaceful nuclear explosions were once considered to hold the key to many engineering and other civilian projects; but today, because of concern about their effects and the impossibility of

distinguishing between a peaceful and a military nuclear device, environmental and nonproliferation considerations have become paramount.” Miguel Márin Bosch, August 4, 1994, CD/PV.686.

¹² In highlighting this change of position, Sweden’s ambassador, Lars Norberg, explained that “all PNEs imply a problem since experience gained from them might be used in the development of nuclear weapons”. He also noted environmental hazards and “increasing doubts as to the possibility of using PNEs for any practical purpose”. Lars Norberg, June 3, 1993, CD/PV.651.

¹³ All quotes in this paragraph relating to China’s position are from Hou Zhitong, March 24, 1994, CD/PV.676.

¹⁴ Group of 21 Working Paper *Some key elements of a Comprehensive Nuclear Test Ban Treaty*, CD/1252, March 22, 1994.

¹⁵ John D. Holum, Director, US Arms Control and Disarmament Agency, January 25, 1994, CD/PV.666. US Ambassador Stephen Ledogar quoted from a March 15 statement by the White House Press Secretary on extending the US moratorium, Statement to the CD, March 17, 1994, CD/PV.675.

¹⁶ Interview with Sir Michael Weston, Matfield, June 11, 2002.

¹⁷ Hou Zhitong, March 24, 1994, CD/PV.676. At this time, China also tabled a working paper on the *Basic structure of a comprehensive test ban treaty*, which (in addition to the standard treaty articles) proposed sections on scope, definition, declaration, activities not prohibited, peaceful uses of nuclear energy and peaceful nuclear explosion, non-nuclear explosions, security guarantees for states parties, consultation, cooperation and development, and relation to other international agreements. China, *Working paper on Basic structure of a comprehensive test ban treaty*, March 30, 1994 (CD/1255).

¹⁸ China’s working papers on *security assurances* (CD/NTB/WP.122); *entry into force* (CD/NTB/WP.123); *preamble* (CD/NTB/WP.124); *duration and withdrawal* (CD/NTB/WP.125); *amendments* (CD/NTB/WP.126); *review* (CD/NTB/WP.127); and *organisational structure* (CD/NTB/WP.128): all dated June 20, 1994.

¹⁹ Statement by the Spokesman of the Foreign Ministry of the People’s Republic of China, June 10, 1994, made available to the CD in a letter from Hou Zhitong, June 16, 1994, CD/1263. At the time, analysts of nuance in Chinese statements were struck by the insertion of the phrase “supports the idea” with regard to the 1996 target date, speculating that this was a less definite commitment than given on October 5, 1993, when the Chinese Government had stated “While supporting its early conclusion, China will take an active part in the negotiating process and work together with other countries to conclude this treaty no later than 1996.” Peoples Republic of China, *Official Statement*, October 5, 1993.

²⁰ China said little, but, as mentioned above, the delegation suddenly tabled seven working papers with draft treaty language which Beijing insisted must be included. If anything, this confirmed the Chair’s instinct that it was necessary to concentrate the negotiators’ minds on an actual text and force the real problem issues out from the camouflage of endless discussions.

²¹ Sir Michael Weston’s declaration also served to offend the Swedes and Australians, who cherished the view that their drafts had helped to lay a useful groundwork for the early negotiations.

²² Interview with Stephen Ledogar, New York, November 5, 2000. Despite the Franco-British alliance on issues like safety tests and timing, with which Germany disagreed, Germany had, according to its diplomats, instructions to reassure France and keep it on board. This was understood to be in the context of Bonn’s foreign policy priorities in relation to the Franco-German relationship in the European Union.

²³ *Report of the Ad Hoc Committee on a Nuclear Test Ban to the Conference on Disarmament*, September 5, 1994, CD/1273/Rev.1.

²⁴ See Chapter 7 for explanations of the relevance of and debates on these various verification technologies.

²⁵ Hendrik Wagenmakers, June 30, 1994, CD/PV.684.

²⁶ As with previous test ban negotiations, time was spent on considering improbable evasion scenarios in remote locations around the world, dreamed up by nuclear weapon technicians and presented as if, being theoretically possible, they were technically feasible or militarily significant.

²⁷ The Hatfield-Exon-Mitchell Amendment, sec. 507 of the Energy and Water Appropriations Act for Fiscal Year 1993. See Chapter 4.

²⁸ Because the issues relating to the implementing organisation were considered rather broad and complex, Kumar coordinated an ‘Organisation team’ of three other diplomats to assist in gathering and sifting information and practical requirements.

²⁹ Australian working paper, *Draft Article on Scope*, March 9, 1995, CD/NTB/WP.222.

³⁰ Ralph Earle II, Deputy Director of ACDA, January 31, 1995, CD/PV.693.

³¹ See Chapter 3.

³² The G-21 issued a statement opposing the easy opt-out provision, December 16, 1994. A number of US allies made representations to the US government behind the scenes. Though these were off the record and not made public, diplomats from several European and Asia-Pacific countries made a point of telling me about their initiatives on this.

³³ The Campaign for the Non-Proliferation Treaty, known as the Campaign for the NPT, was initiated by Michael Krepon of the Henry L. Stimson Center, together with the W. Alton Jones Foundation, a major US funder of arms control projects. By 1994, Joseph Cirincione, a former Senate aide to the Committee on Foreign Relations had been hired to coordinate the political and media strategies, and 18 of the most influential Washington-based NGOs were on board. Members of the Campaign for the NPT were: the Arms Control Association; the British-American Security Information Council; Center for Defense Information; Committee for National Security; Council for a Livable World; Institute for Science and International Security; Lawyers Alliance for World Security; Manhattan Project II; Natural Resources Defense Council; Nuclear Control Institute; Peace Action; Physicians for Social Responsibility; Plutonium Challenge; Public Education Center; Henry L. Stimson Center; Union of Concerned Scientists; Washington Council on Non-Proliferation; Women's Action for New Directions.

³⁴ As part of the NGO strategy to use the NPT extension decision as leverage for a CTBT, I was invited to Washington for a round of meetings with key administration officials, including Robert Bell, Director for Arms Control at the National Security Council (and Special Advisor to President Clinton), and Ashton Carter, Assistant Secretary for Defense, at the Pentagon, and the aides to some of the senior Senators and Congressional Representatives. The visit culminated in a roundtable debate on the CTBT and NPT between the designated head of the US NPT delegation, Ambassador Thomas Graham, and me. This roundtable was hosted by the Henry L. Stimson Center for around 40 government officials, selected Embassy officials, media and members of the US Congress. As I did not personally advocate indefinite extension, I concentrated my remarks on the nonaligned concerns that the US commitment to a CTBT was not genuine, illustrated by the "easy opt-out" proposal and the P-5 attempts to institute a testing threshold under the guise of the test-ban.

³⁵ Author's conversation with Miguel Marín Bosch, January 1995.

³⁶ New insights, which emerged as the political war between advocates and opponents of the CTBT in the United States became more visible and pronounced during the ratification difficulties in 1998-99 and in the Republican attitude to the CTBT taken forward by President George W. Bush, suggest that the proposal may have been of more serious intent than many CTBT negotiators thought at the time. Stephen Ledogar's conversation with the author, November 5, 2000, bears this *post hoc* perception out.

³⁷ Sir Michael Weston, 6 April 1995, CD/PV.705.

³⁸ See Chapter 6.

³⁹ In July 1993, Ambassador Ledogar informed the CD that: "President Clinton wants to negotiate a multilateral ban on all nuclear-weapons tests. We do not seek another threshold test ban treaty. The President considered and rejected the option of proposing a one-kiloton threshold. We are seeking a comprehensive test ban, not a limited or threshold test ban." Statement by Stephen Ledogar, July 29, 1993, CD/PV.657.

⁴⁰ According to the US definition, warheads are characterised as one-point safe if the probability of the nuclear yield exceeding 1.8 kg following a sharp collision (resulting from being hit by a bullet or heavy implement or dropped, for example) is judged to be less than one in a million. The implications of this designation for the CTBT negotiations are explored in more detail in Chapter 6.

⁴¹ Interview with Sir Michael Weston, Matfield, June 11, 2002.

⁴² A number of states which were marginalised in the negotiations, both members and non-members of the CD, made representations on the CTBT during the NPT debates. While the Western states party to the NPT tended to applaud the CTBT progress, concerns were also expressed about what Zimbabwe characterised as the "current snail's pace" of negotiations. Kenya, whose CD and NTB Committee seat was empty most of the time in Geneva, worried that the CD had not "produced much result" on the CTBT. Switzerland, an applicant for CD membership that had sustained constructive but relatively low-key participation in the negotiations expressed disappointment at the "little progress reached so far" and warned that to allow "exceptions to the principle of a complete test ban is... incompatible with the spirit of Article VI of the NPT ... [and would] raise certain doubts as to the commitment to renounce all nuclear test explosions forever." The Philippines said "nothing substantial had been accomplished" in the CD and Viet Nam called the CTBT "a hope rather than a reality". This section on the NPT debates on the CTBT is based on my published report on the 1995 NPT Review and Extension Conference. Quotations are taken from the written statements and working papers of the

states cited. See Rebecca Johnson, *Indefinite Extension of the Non-Proliferation Treaty: Risks and Reckonings*, ACRONYM 7, (London, The Acronym Consortium, September 1995) pp16 and 38-40.

⁴³ Sweden made a point of emphasising that there were no technical barriers to achieving a CTBT: "what is needed now is political will". In shadow of persistent rumours during the NPT Conference that France was considering a resumption of its nuclear test programme after the presidential elections in May 1995, various Pacific States, notably Fiji, Papua New Guinea, New Zealand and the Solomon Islands, asserted linkage between the NPT Article VII commitment to nuclear weapon free zones and the CTBT, by highlighting the obligations of the Treaty of Rarotonga. Calling on France, Britain and the United States to sign the protocols relevant to them as NWS, the Pacific nations placed particular emphasis on Protocol 3's obligation not to conduct any nuclear testing. Ibid.

⁴⁴ The Chair of Main Committee III was Jaap Ramaker, who was later chosen to chair the final year of the CTBT negotiations in 1996.

⁴⁵ In full, Article V of the NPT states; "Each Party to the Treaty undertakes to take appropriate measures to ensure that, in accordance with this Treaty, under appropriate international observation and through appropriate international procedures, potential benefits from any peaceful applications of nuclear explosions will be made available to non-nuclear-weapon States Party to the Treaty on a non-discriminatory basis and that the charge to such Parties for the explosive devices used will be as low as possible and exclude any charge for research and development. Non-nuclear-weapon States Party to the Treaty shall be able to obtain such benefits, pursuant to a special international agreement or agreements, through an appropriate international body with adequate representation of non-nuclear-weapon states. Negotiations on this subject shall commence as soon as possible after the Treaty enters into force. Non-nuclear-weapon States Party to the Treaty so desiring may also obtain such benefits pursuant to bilateral agreements." 1968 *Treaty on the Non-Proliferation of Nuclear Weapons*.

⁴⁶ *Working Paper on Article V*, submitted by Algeria, Australia, Austria, Belarus, Cambodia, Canada, Croatia, the Czech Republic, Denmark, Finland, Hungary, Indonesia, Ireland, Kazakhstan, Kenya, Kyrgyzstan, Latvia, Lebanon, Malaysia, the Netherlands, New Zealand, Norway, Papua New Guinea, the Philippines, the Republic of Korea, Romania, Slovakia, South Africa, Sri Lanka, Sweden and Ukraine, May 3, 1995, NPT/CONF.1995/MC.II/WP.6 and NPT/CONF.1995/MC.II/WP.6/Add.1 (May 9, 1995) adding the following countries: Bulgaria, Colombia, Japan, the Marshall Islands, Palau, Poland, Switzerland, Tonga, Tuvalu and Uruguay. Report of Main Committee III, NPT/CONF.1995/MC.III/I. See *1995 Review and Extension Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, Final Document*, NPT/CONF.1995/32 (Part II), (New York: United Nations, 1995) pp 401-403.

⁴⁷ The paragraphs as agreed by Main Committee III and the Drafting Committee are at NPT/CONF.1995/32 (Part II), pp 385-386.

⁴⁸ Ambassador Isaac Ayewah of Nigeria chaired Main Committee I in 1995.

⁴⁹ Interview with Jayantha Dhanapala, President of the 1995 NPT Review and Extension Conference, conducted by the author and Jim Wurst of *Disarmament Times*, New York, May 13, 1995.

⁵⁰ Paragraph 4 (a) read in full: "The achievement of the following measures is important in the full realisation and effective implementation of Article VI, including the programme of action as reflected below: (a) The completion by the Conference on Disarmament of the negotiations on a universal and internationally and effectively verifiable Comprehensive Nuclear-Test-Ban Treaty no later than 1996. Pending the entry into force of a Comprehensive Test-Ban Treaty, the nuclear-weapon states should exercise utmost restraint;" as adopted on May 11, 1995. *1995 Review and Extension Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, Final Document*, NPT/CONF.1995/32 (Part I), (New York: United Nations, 1995).

⁵¹ Jonathan Mirsky, "Neighbours condemn Chinese nuclear test", *The Times*, May 16, 2001; and Ian Black, "China snubs world with nuclear test", *The Guardian*, May 16, 2001. Black quotes an unnamed UK official acknowledging that China's test, so soon after the NPT Conference had closed was "certainly indelicate, because it looks as if the nuclear powers have got what they wanted and are back to business as usual".

⁵² From author's conversations with the diplomats (off the record), New York, May 17, 1995. See Rebecca Johnson, ACRONYM 7 (September 1995) p 62. Although I could not get formal confirmation of the internal discussions (or lack) on the timing of nuclear tests from the Chinese delegation, I did elicit the comment that the Chinese military determines its testing schedule according to need and conditions, which I took to be confirmation that diplomatic sensitivities would not normally be considered (and, indeed, that diplomats were unlikely to be told in advance, which suggests that knowledge of the preparations to test in early May derived from US intelligence reports, as the earlier-cited off the record interview had intimated). China conducted a further, 60-80 kt explosion (its 43rd)

on August 17, 1995, the date of the CD plenary at which the US ambassador formally presented President Clinton's zero yield scope decision to the test ban negotiators. This was almost certainly a coincidence, providing more evidence of a lack of coordination between the nuclear test decisionmakers and China's Geneva negotiators.

⁵³ See Chapter 6 for more discussion of these protests and their impact.

⁵⁴ Iran's Ambassador Nasserli argued that "attempts at nuclear testing run contrary to the basic objective of the indefinite extension" of the NPT, and that "it was not only the moratorium that kept nuclear tests at bay but that the concerns about the outcome of the NPT Conference also served as a very essential deterrence to nuclear testing." Sirous Nasserli, June 15, 1995, CD/PV.708.

⁵⁵ Satish Chandra, Ambassador of India, speaking on behalf of the G-21, June 29, 1995, CD/PV.710.

⁵⁶ Ibid. (phrasing as in original)

⁵⁷ Ibid.

⁵⁸ Indonesia, Working Paper, *Draft Article on Scope*, June 29, 1995, CD/NTB/WP.243.

⁵⁹ India, Working Paper, *Draft Article on Scope*, June 29, 1995, CD/NTB/WP.244

⁶⁰ Widespread anger and civil society reaction to the French and Chinese testing decisions, especially in Japan and Australia, put pressure on both these governments to make stronger public statements of condemnation than the normally polite diplomatic expressions of regret. In the CD, this caused (or was used to justify) a public deterioration of relations, on the one hand, between the French and Australian delegations, and, on the other, between the Chinese and Japanese. Seeking to deflect criticism and embarrass Japan for taking a "moralistic" stance, the Chinese ambassador resorted to reminding the Japanese ambassador of warcrimes committed by Japan on China during the 1930s and 1940s. For various national expressions condemning the French and Chinese tests, see the verbatim records of the CD for the periods June 1 to July 6, 1995 (CD/PV.706 to CD/PV.711) and August 3 to September 21 (CD/PV.712 to CD/PV.719). See especially Sha Zukang, September 5, 1995, CD/PV.717).

⁶¹ Conversation (off the record) with the author, Geneva, June 1995, quoted in Rebecca Johnson, *ACRONYM 7* (September 1995) p 65.

⁶² Gérard Errera, August 10, 1995, CD/PV.713. France's acceptance of the Australian scope formulation was not immediately associated with zero yield, but assumed to mean that it had dropped its demand for a threshold of up to 300 t and would abide by whatever decision the P-5 could agree on "activities not prohibited". According to the recollections of a senior French official, (in off the record conversations with the author in November 2000), since Britain and the United States had already endorsed the Australian text, while continuing to wrangle within the P-5 sidebar negotiations about threshold levels, France's statement was not intended to mean that it was abandoning the option of conducting very low yield hydronuclear tests.

⁶³ Statement by President William J. Clinton, August 11, 1995, reproduced in CD/1340, August 17, 1995; and *Fact Sheet: Comprehensive Test Ban Treaty Safeguards*, The White House, Office of the Press Secretary, August 11, 1995.

⁶⁴ Article IX in the finalised CTBT states that the treaty is of unlimited duration, but "Each State Party shall, in exercising its national sovereignty, have the right to withdraw from this Treaty if it decides that extraordinary events related to the subject matter of this Treaty have jeopardized its supreme interests."

⁶⁵ Clinton, August 11, 1995.

⁶⁶ Sir Michael Weston, September 14, 1995, CD/PV.718.

⁶⁷ President Boris Yeltsin of Russia stood beside Bill Clinton when the US President announced on October 23 that the two leaders supported a fully comprehensive, true zero yield test ban treaty, but when this was reported, Russian diplomats attending the UN First Committee made a point of emphasising that Yeltsin did not himself speak in favour of that position. On the basis of the Clinton announcement, I wrote in *ACRONYM 8*, which was just going to press, that Russia had come on board the zero yield decision. See Rebecca Johnson, *Comprehensive Test Ban Treaty: Now or Never*, *ACRONYM 8*, (London: Acronym Consortium, October 1995) p 4 and p 32. Victor Slipchenko, Deputy Permanent Representative of the Russian Federation to the CD, notified me in November 1995 that I had been premature with that assessment. He pointed out that though Yeltsin had not interrupted Clinton's speech, his silence should not be interpreted as agreement. During the first part of 1996, the Russian position on scope remained ambiguous: the CD delegation obdurately refused to endorse the zero yield interpretation or Australian text, although there was clearly no chance of reopening the P-5 negotiations on activities not prohibited.

⁶⁸ In subsequent interviews, Victor Slipchenko (Vienna, October 8, 1999) and Grigori Berdennikov (Vienna, July 17, 2001) confirmed that Russia delayed its agreement with the zero yield decision, in part to show anger with the Americans' high-handed manner and lack of consultation, and in part

because of pressure from the Russian nuclear establishment, some of whom considered the preservation of the ageing Russian arsenal untenable in the absence of hydronuclear tests.

⁶⁹ Author's contemporaneous notes of conversations with British officials in Geneva and London; confirmed in interview with Sir Michael Weston, Matfield, June 11, 2002.

⁷⁰ As it turned out, this particular fear proved to be unfounded. At the same time, there was corridor speculation that British delegates were exaggerating the verification question for their own purposes, also not confirmed. It must be noted that in the hotbed of Geneva politics, corridor speculation, rumours and counter rumours about the motivations of different delegations and individuals were rife, and some diplomats made a habit of briefing against others and fuelling gossip on the flimsiest of pretexts.

⁷¹ Rebecca Johnson, ACRONYM 8 (October 1995) p 29.

⁷² See, for example, William Drozdiak, "France's Nuclear Storm: Plan to Resume Testing in Pacific Unleashes Typhoon of Anger", *Washington Post*, July 8, 1995; "Labour joins Australian and New Zealand Parties in Protest Against French Nuclear Tests", *UK Labour Party press release*, August 29, 1995; "EU Anger at being left in the dark", *The Telegraph*, September 7, 1995; and Paul Webster and Paul Brown, "France plans bigger bomb", *The Guardian*, September 7, 1995.

⁷³ Érrera transmitted Chirac's decision to the CD on June 15, and on several occasions prior to leaving the CD in August 1995, he reiterated that the French decision to resume testing was "not one decision, but two: a first decision, that to carry out a final series of tests limited in time and limited in number, and a second, essential decision, that to commit ourselves to signing the nuclear test ban treaty next year, in autumn 1996. The first decision is temporary, the second decision is definitive. The second would not have been possible without the first." See Gérard Érrera, June 15, 1995, CD/PV.708; and June 22, 1995, CD/PV.709.

⁷⁴ John Chalmers, "Chirac holds out prospect of fewer nuclear tests", *Reuters*, September 5, 1995. See Chapter 6 for further discussion of civil society pressure and the French nuclear tests.

⁷⁵ Érrera argued that the decision to test was necessary because the April 1992 moratorium had suspended French nuclear testing before the completion of tests to enable France to "embark determinedly on a policy of using simulation in order to guarantee the safety and reliability of its weapons". In the same statement, Érrera made reference to "take part in the movement towards disarmament" and promised that there was no intention "to design new types of weapons nor to increase the number or yield of its existing weapons, nor to develop miniature weapons, nor to modify the role of nuclear weapons in its defence doctrine." He quoted a statement made by Prime Minister Alain Juppé on May 23, 1995, that "Our duty is to ensure the credibility and effectiveness of our deterrence in all circumstances while preserving the aim of concluding a test ban treaty by the end of 1996. Our country intends to contribute fully to the fight against proliferation..." Gérard Érrera, June 15, 1995, CD/PV.708.

⁷⁶ Warren Christopher, US Secretary of State, Press Conference, Nato Headquarters, Brussels, December 10, 1996. The North Atlantic Council Foreign Ministers Meeting Final Communiqué uses slightly different wording: "Enlarging the Alliance will not require a change in NATO's current nuclear posture and therefore, NATO countries have no intention, no plan and no reason to deploy nuclear weapons on the territory of new members nor any need to change any aspect of NATO's nuclear posture or nuclear policy..." *Final Communiqué*, Issued at the Foreign Minister Level Ministerial Meeting of the North Atlantic Council, NATO Headquarters, Brussels, M-NAC-2, December 10, 1996.

⁷⁷ Andrei Kozyrev personally addressed the CD on June 29, 1995. He called for inclusion on the CD's agenda of an item on nuclear disarmament. He also criticised the French and Chinese testing plans in terms quite different from those of the Russian delegation, which adhered rather to P-5 solidarity and mild expressions of regret. Kozyrev reminded the CD of the NPT agreement to show "utmost restraint" over testing pending the CTBT's entry into force: "we find it hard to agree with those who allege that the continuation or resumption of nuclear tests is not in contradiction with that provision. 'Utmost restraint' in this matter should be the same for all." Kozyrev was replaced as Foreign Minister soon after. See CD/PV.710.

⁷⁸ *Report of the Ad Hoc Committee on a Nuclear Test Ban to the Conference on Disarmament*, September 6, 1995, CD/1346.Rev.1.

⁷⁹ Tim Weiner, "US Suspects India Prepares to Conduct Nuclear Test", *New York Times*, December 15, 1995; and Tim Weiner, "US spy satellites zoom in on Pokhran, detect nuclear activity", reprinted from the New York Times News Service in *The Times of India*, December 16, 1995. The following selection of news reports from India gives some indication of the public debate that raged from November 1995. *The Hindu* carried several articles portrayed the US leak as having been manufactured because the

United States and the rest of the P-5 disagreed with India's position linking the CTBT with nuclear disarmament, explicitly put forward for the first time in September 1995 in Vienna by the Chair of India's Atomic Energy Commission, Dr. R. Chidambaram. See "India not planning n-test" *The Hindu*, December 20, 1995. See also C. Raja Mohan, "US Unhappy about Indian position on CTBT", *The Hindu*, November 27, 1995; C. Raja Mohan, "Asia and the CTBT", *The Hindu*, December 5, 1995; K.P. Nayar, "America seeks to perpetuate nuclear apartheid", *The Hindu*, December 19, 1995; K.K. Katyal, "National consensus over nuclear issue", *The Hindu*, December 23, 1995; C. Raja Mohan, "Ploy to pressure India on CTBT", *The Hindu*, December 17, 1995; Aziz Hanliffa, "N-leak was to trap India into CTBT", *The Hindu*, December 30, 1995; "Security Experts back CTBT-elimination linkage", *The Hindu*, January 3, 1996. Other articles explicitly called for India to conduct nuclear tests. See, for example, "Security Experts: India must conduct N-test", *The Hindustan Times*, New Delhi, January 7, 1996. A later flurry of articles criticised the United States for linking the nuclear test allegation with threats to cut aid. See, for example, Sridhar Krishnaswami, "N-test: US warns India of aid cut", *The Hindu*, January 18, 1996; and Sridhar Krishnaswami, "Can India face US sanctions?", *The Hindu*, January 19, 1996. The case for the CTBT was less well covered, though there were a few notable voices advocating the test ban. See, for example, Praful Bidwai, "New Delhi should campaign for a CTBT", *The Economic Times*, January 8, 1996; Amitabh Mattoo, "Explosive Consequences: India must weigh the considerable costs of holding a second nuclear test", *The Times of India*, January 9, 1996; Praful Bidwai "The Case for a CTBT: India must seize the moment", *The Times of India*, January 12, 1996; and Achin Vanaik, "Standing on zero ground", *The Hindu*, January 15, 1996.

⁸⁰ "Pranab's denial is welcome, says US", *The Asian Age*, December 22, 1995;

⁸¹ It is thought that Rao caved in to the demands of the weaponeers and authorised the preparations in 1995 because he was under very severe political pressure from the BJP and facing influential private and public critics of his defence policies in the run-up to a closely fought general election, scheduled for mid-1996. See George Perkovich, *India's Nuclear Bomb*, (Berkeley CA, University of California Press, 1999) pp 353-377.

⁸² Praful Bidwai and Achin Vanaik, *Testing Times: The Global Stake in a Nuclear Test Ban*, (Uppsala: The Dag Hammarskjöld Foundation, 1996).

⁸³ Miguel Márin Bosch, January 31, 1995, CD/PV.693.

⁸⁴ Munir Akram, August 24, 1995, CD/PV.715.

⁸⁵ "New Contractor Announced for Nevada Test Site: Secretary Outlines Plans for Site", *DOE News*, October 27, 1995 (R-95-I60).

⁸⁶ Stephen Ledogar, interview, New York, November 5, 2000.

⁸⁷ Resolution on a Comprehensive Test Ban Treaty, A/50/585 (UNGA Res. 50/65), adopted without a vote, United Nations General Assembly, New York, December 12, 1995.

⁸⁸ For a full account of the final negotiations on CD enlargement in 1996, see Rebecca Johnson, CD Update No. 29, *Disarmament Diplomacy* 6 (June 1996) pp 24-27.

⁸⁹ Israel and several other CD candidate states participated in all major sessions of the NTB Committee, and were able to have their working papers and proposals considered on an equal basis. The non-members were less well represented in group meetings and the more formal management structures for decisionmaking in the CD, although the United States made sure that Israel's interests were represented where necessary.

⁹⁰ The EU, whose members were in the majority in the Western group, was increasingly corralled into joint decisions, to the dismay of non-European middle powers, who considered that the interests of France and Britain carried undue weight in EU decision-making on nuclear issues. In addition, such decisions were at times coordinated outside Geneva, by officials without specific knowledge of the CD dynamics and with their own agenda based on non-CTBT issues and alliance considerations.

⁹¹ Sir Michael Weston, interview, Matfield, June 11, 2002.

⁹² Near the end of the negotiations, Wolfgang Hoffmann was replaced by Don Sinclair of Canada because Ambassador Hoffmann was put forward as a candidate for the first Executive Secretary of the Preparatory Commission for the Comprehensive Nuclear Test Ban Treaty Organisation (CTBTO PrepCom). Hoffmann was subsequently confirmed as Executive Secretary when the CTBTO began to be established in Vienna.

⁹³ John Holum, Director of the US Arms Control and Disarmament Agency, January 23, 1996, CD/PV.721.

⁹⁴ See Munir Akram, January 23, 1996, CD/PV.721; Ambassador Goonetilleke, February 1, 1996, CD/PV.723; and Mounir Zahran, February 1, 1996, CD/PV.723. The first of the subcritical tests had been scheduled for June 1996, which would have placed it in the middle of the critical final phase of negotiations. In addition to representations from a number of US and international NGOs to have the

tests called off, Jaap Ramaker made a personal appeal to the Clinton administration not to conduct any such tests during the negotiations. The June subcritical test, codenamed "Rebound" was subsequently postponed. Though the DOE press statement linked the postponement with the CTB negotiations, it also underlined that the tests were "an essential ingredient" of the stockpile stewardship programme and did not "technically violate a zero yield ban". See "DOE opts to postpone NTS weapon test", *Inside Energy*, June 10, 1996.

⁹⁵ William Walker, "Viewpoint: India's Nuclear Labyrinth", *The Nonproliferation Review* (Fall 1996) pp 61-77. For a very detailed picture of India's debates and dilemmas, see also Perkovich, 1999.

⁹⁶ Rebecca Johnson, Geneva Update No 25, in *Disarmament Diplomacy* 1 (January 1996), p 6. See also "Concerns Rise over India Nuclear Stance", News Review compiled by Sean Howard, *Disarmament Diplomacy* 1 (January 1996), p 37-38.

⁹⁷ Arundhati Ghose, January 25, 1996, CD/PV.722.

⁹⁸ India's working papers on the *Preamble* (CD/NTB/WP.295); on *Review* (CD/NTB/WP.296); and on *Entry into Force* (CD/NTB/WP.297); all tabled on January 29, 1996.

⁹⁹ India had proposed that "...this Treaty shall enter into force only after all states parties have committed themselves to the attainment of the goal of total elimination of all nuclear weapons within a well defined time framework (of ten years)." India, working paper, *Entry into force*, January 29, 1996, WP. CD/NTB/WP.297.

¹⁰⁰ Atal Behari Vajpayee, Member of Parliament and Member of the Indian Delegation, Statement to the 50th United Nations General Assembly, at the First Committee, New York, October 26, 1995.

¹⁰¹ Ghose made an oblique reference to these corridor discussions, calling the CD a "hall with trick mirrors in which nothing is what it seems to be". Again, her tactics relied on combining best-versus-good and hide-and-seek, as she complained that "Those who want a truly comprehensive treaty are labelled spoilers. Those who want to eliminate nuclear weapons are being seen as a threat to disarmament. A time-bound framework to eliminate nuclear weapons is seen as a diabolical plot to stall negotiations on the CTBT." Arundhati Ghose, February 15, 1996, CD/PV.725.

¹⁰² Grigori Berdennikov, March 7, 1996, CD/PV.728. Although remarks about the NPT were clearly aimed at India, they were equally applicable to comments made by British and French officials immediately after May 1995. See Johnson, ACRONYM 7 (September 1995), p 70.

¹⁰³ Hocine Meghlaoui, February 8, 1996, CD/PV.724.

¹⁰⁴ Agus Tarmidzi, February 8, 1996, CD/PV.724.

¹⁰⁵ Munir Akram, January 23, 1996, CD/PV.721.

¹⁰⁶ Dr Ali Akbar Velayati, Foreign Minister of Iran, February 22 1996, CD/PV.726

¹⁰⁷ Michael Costello, Secretary of the Australian Department of Foreign Affairs and Trade, February 29 1996, CD/PV.727.

¹⁰⁸ This perception, noted in my reports at the time, was subsequently confirmed by the US and UK ambassadors. Interviews with Stephen Ledogar, New York, November 5, 2000; and Sir Michael Weston, Matfield, June 11, 2002.

¹⁰⁹ Joëlle Bourgois, February 29, 1996, CD/PV.727.

¹¹⁰ Grigori Berdennikov, February 29, 1996, CD/PV.727.

¹¹¹ Stephen Ledogar, February 29, 1996, CD/PV.727.

¹¹² Sirous Nasser, February 29, 1996, CD/PV.727.

¹¹³ Australia, *Comprehensive Nuclear Test Ban Treaty, Model Treaty Text*, February 29, 1996, CD/1386 and Australia, *Comprehensive Nuclear Test Ban Treaty, Explanatory Notes Accompanying Model Treaty Text*, February 29, 1996, CD/1387.

¹¹⁴ Islamic Republic of Iran, *Draft Comprehensive Test Ban Treaty*, February 21, 1996, CD/1384.

¹¹⁵ Ibid.

¹¹⁶ Ghose stressed that while every delegation has the right to present their national positions of what would constitute a balanced text, "there is only one text on the basis of which we can hope to get consensus and that is the current rolling text. Any change of this basis could temporarily exclude my delegation from the negotiations, a development which we would view with dismay and disappointment." She concluded that "in our efforts to speed up negotiations, we may very well end up by delaying them." Arundhati Ghose, February 29, 1996, CD/PV.727. China's views were expressed informally until its first major policy statement of 1996, in late March. Warning against an artificial climate of urgency, Sha Zukang implied that the Iranian and Australian texts – and indeed, the Chair's working paper – were just reference materials, though he characterised them as valuable. Sha argued that "as the CTBT will have a long-term bearing on international peace and security, we are against wrapping up these issues in a simplistic, hasty manner for the sake of mere political expediency." Sha Zukang, March 28, 1996, CD/PV.733.

¹¹⁷ Chairman of the Ad Hoc Committee on a Nuclear Test Ban, Working Paper, *Outline of a draft Comprehensive Nuclear Test Ban Treaty*, March 28, 1996, CD/NTB/WP.321.

¹¹⁸ Author's contemporaneous notes of conversation with a senior member of the Dutch delegation, reporting on Ramaker's statement to the NTB Committee, March 28, 1996.

¹¹⁹ Chairman of the Ad Hoc Committee on a Nuclear Test Ban, *Draft Comprehensive Nuclear Test Ban Treaty*, May 28, 1996, CD/NTB/WP.330.

¹²⁰ Author's contemporaneous notes of conversation with a senior member of the Dutch delegation, reporting on Ramaker's statement to the NTB Committee when he tabled the draft, May 28, 1996.

¹²¹ Author's conversations during the week of May 28 with senior diplomats from most of the key delegations.

¹²² Unofficial working paper from the delegations of Brazil, Cuba, Indonesia, Iran, Kenya, Mexico, Mongolia, Myanmar, Nigeria, Pakistan, Peru, Sri Lanka and Venezuela, entitled *Amendment proposals to Chairman's WP.330 and 335 on Preamble*, June 25, 1996. To the embarrassment of the United States, an article in the *Washington Post* on June 17 had leaked news of a "secret" agreement signed by the United States and France on the exchange of nuclear-related data, especially ensuring access to data related to computer-simulated nuclear tests. "France, US sign secret deal to exchange nuclear information", *Agence France Presse International News*, June 17, 1996; "US argues for secret nuclear deals", *Reuters News Reports*, June 17, 1996; and "Franco-US deal covers technical cooperation – Ministry", *Agence France Presse International News*, June 17, 1996. See also "US and France said to Deepen Nuclear-Weapons Cooperation", *Disarmament Diplomacy* 7 (July/August, 1996).

¹²³ The IMS stations, listed in an annex to the verification protocol, were intended to be part of an easily amended, flexible protocol to the treaty that could evolve as required. Although the EIF provision in WP.330 had referred only to primary seismic stations and radionuclide laboratories, India actually withdrew all its IMS-designated facilities, consisting of: one primary seismic station; one auxiliary station; a radionuclide station and an infrasound station. See Annex to the Protocol, Tables 1-A; 1-B; 2-A; and 4. Chairman of the Ad Hoc Committee on a Nuclear Test Ban, *Draft Comprehensive Nuclear Test Ban Treaty*, August 14, 1996, CD/NTB/WP.330/Rev.2. The gaps left by India's withdrawal are marked "to be determined".

¹²⁴ In one of the strange, almost comedic vignettes of the CTBT negotiations, the blow-by-blow account of the entry into force meeting on June 20 was relayed to the three NGO watchers outside the doors by diplomats escaping the room, not only for the usual reasons of a cigarette or the toilet, but to check up on the score of the England v Germany football match, relayed over the Greenpeace representative's small radio.

¹²⁵ Chairman of the Ad Hoc Committee on a Nuclear Test Ban, working paper, *Entry into Force*, June 20, 1996, CD/NTB/WP.334. See Chapter 8 for details.

¹²⁶ The quotations in this paragraph are all from Arundhati Ghose's statement to the CD, June 20, 1996, CD/PV.740.

¹²⁷ The relevant part of Ghose's statement continued: "Under such circumstances, it is natural that our national security considerations become a key factor in our decision-making. Our capability is demonstrated but, as a matter of policy, we exercise restraint. Countries around us continue in their weapon programmes, either openly or in a clandestine manner. In such an environment, India cannot accept any restraints on its capability if other countries remain unwilling to accept the obligation to eliminate their nuclear weapons." She reminded CD members that India had refused to accede to the NPT, despite various kinds of pressure. "The same conviction is reflected in our stand on the CTBT. Last year we expressed our dismay at the indefinite extension of the NPT because, in our view, it sought to legitimise the indefinite possession of nuclear weapons by five countries. Today, the right to continue development and refinement of their arsenals is being sought to be legitimised through another flawed and eternal treaty. Such a treaty is not conceived as a measure towards universal nuclear disarmament and is not in India's national security interest." Ibid.

¹²⁸ Ibid.

¹²⁹ Author's conversations with senior Dutch officials, The Hague, March 29, 2002.

¹³⁰ Chairman of the Ad Hoc Committee on a Nuclear Test Ban, *Draft Comprehensive Nuclear Test Ban Treaty*, June 28, 1996, CD/NTB/WP.330/Rev.1.

¹³¹ See Chapter 8.

¹³² Sha Zukang announced on June 6 that China would be willing to accept "a temporary ban on PNEs" and endorse the Australian scope text, wanting only a reference to a future possibility of reconsideration at a review conference. Sha Zukang, June 6, 1996, CD/PV.737. For further analysis of the PNE question, see Chapter 6.

¹³³ See Chapter 7.

- ¹³⁴ The Chinese government statement issued through *Xinhua News Agency* read in full: “China successfully conducted a nuclear test today. The Chinese government hereby solemnly declares that it will start a moratorium from July 30, 1996. Such an important decision by China is not only a response to the appeal of the vast number of non nuclear weapon states, but also a concrete action to promote nuclear disarmament.” For international reactions to the test, see “China tests, declares moratorium”, *Disarmament Diplomacy* 7 (July/August 1996).
- ¹³⁵ Arundhati Ghose, interview, New Delhi, February 20, 2000.
- ¹³⁶ Algeria, Bangladesh, Brazil, Cameroon, Colombia, Cuba, Democratic People’s Republic of Korea, Egypt, Ethiopia, India, Indonesia, Iraq, Islamic Republic of Iran, Kenya, Mexico, Mongolia, Morocco, Myanmar, Myanmar, Nigeria, Pakistan, Peru, Senegal, Sri Lanka, Syrian Arab Republic, Venezuela, Viet Nam, Zaire and Zimbabwe, *Proposal for a programme of action for the elimination of nuclear weapons*, August 7, 1996, CD/1419.
- ¹³⁷ Thirteen Delegations of the G-21: Brazil, Cuba, Indonesia, Iran, Kenya, Mexico, Mongolia, Pakistan, Peru, Sri Lanka, Nigeria, Myanmar, Venezuela, Working paper, *Proposed amendments to the Preamble in the Chairman’s Working Papers* (CD/NTB/WP.330 and CD/NTB/WP.335), June 27, 1996, CD/NTB/WP.336. See also CD/NTB/WP.336/Rev.1, dated July 18, 1996.
- ¹³⁸ Author’s contemporaneous notes from off the record conversations and interviews, June 1996.
- ¹³⁹ All quotes in this paragraph are from the *Preamble, Draft Comprehensive Nuclear Test Ban Treaty*, August 14, 1996, CD/NTB/WP.330/Rev.2.
- ¹⁴⁰ There had been considerable debate about whether the word ‘nuclear’ needed to be in the formal title of the treaty and organisation. In the end it was included, so the organisation is formally the Comprehensive Nuclear Test Ban Treaty Organisation but the common abbreviation ‘CTBT’ was also retained in ‘CTBTO’.
- ¹⁴¹ *Article III, The Organisation*, *ibid*.
- ¹⁴² *Report of the Ad Hoc Committee on a Nuclear Test Ban to the Conference on Disarmament*, August 19, 1996, CD/1425/Corr.1
- ¹⁴³ Statement by the delegation of the Islamic Republic of Iran, Section VI, paragraph 28, *Report of the Ad Hoc Committee on a Nuclear Test Ban to the Conference on Disarmament*, *ibid*.
- ¹⁴⁴ Sirous Nasser, August 22, 1996, CD/PV.747.
- ¹⁴⁵ Though the report was technical in essence, describing the course of negotiations “factually”, as India had demanded, it referred to the draft treaty and included mention of “a new negotiating framework” following presentation of the Chair’s first draft text (WP.330) on May 28, thereby signifying that this draft text did in fact replace the rolling text as the basis of negotiations, even if no formal decision to do this was taken. For these reasons, India decided that, even shorn of the draft treaty itself, the NTB Committee Report could provide a basis for the UN General Assembly to approve the treaty, and so should be vetoed.
- ¹⁴⁶ Munir Akram, August 20, 1996, CD/PV.746.
- ¹⁴⁷ Jaap Ramaker, Chair of the Nuclear Test Ban Committee, August 20, 1996, CD/PV.746.
- ¹⁴⁸ Arundhati Ghose, August 20, 1996, CD/PV.746.
- ¹⁴⁹ Munir Akram, August 20, 1996, CD/PV.746.
- ¹⁵⁰ Richard Starr, August 22, 1996, CD/PV.747
- ¹⁵¹ Letter dated 22 August 1996 from the Permanent Representative of Australia to the United Nations addressed to the President of the General Assembly, *Adoption of the Agenda and Organisation of Work*, A/50/1024.
- ¹⁵² Resolution, *Comprehensive Test Ban Treaty*, A/50/L.78, September 6, 1996.
- ¹⁵³ Letter dated 22 August 1996 from the Permanent Representative of Belgium addressed to the President of the Conference transmitting the text of a Draft Comprehensive Nuclear Test Ban Treaty, August 22, 1996, CD/1427.
- ¹⁵⁴ A/50/1027
- ¹⁵⁵ International Court of Justice Reports 1996, p 225. [Reported for July 8, 1996, General List No. 95]. The full decision, documentation and dissenting decisions also formed the Annex to ‘Advisory Opinion of the International Court of Justice on the legality of the threat or use of nuclear weapons’, Note by the Secretary-General, United Nations General Assembly A/51/218, October 15, 1996. See also Chapter 3 note 102.
- ¹⁵⁶ The quotation, from my contemporaneous notes of the GA meeting, was attributed to the representative of Ghana, but no independent documentary confirmation has been obtainable.
- ¹⁵⁷ Explanation of vote by H.E. Mr Munir Akram, Ambassador and Permanent Representative of Pakistan to the European Office of the United Nations in Geneva, New York, September 10, 1996.
- ¹⁵⁸ Prakash Shah, Ambassador of India to the United Nations General Assembly, September 9, 1996.

¹⁵⁹ Letter dated 9 September 1996 from the Permanent Representative of India to the United Nations addressed to the President of the General Assembly, *Adoption of the Agenda and Organisation of Work, Comprehensive Test Ban Treaty*, A/50/1036.

¹⁶⁰ Bhutan is effectively a dependent territory of India and votes in accordance with India's wishes.

¹⁶¹ Diplomatic absence can be for reasons other than non-attendance. Some (on this occasion including a number of the resolution's co-sponsors and Iraq) were not permitted to vote because their payments to the United Nations were in serious arrears. In view of the Democratic People's Republic of Korea's subsequent failure to sign the CTBT, it should be noted that the DPRK was also counted as absent from the vote.

¹⁶² Arundhati Ghose, Ambassador of India to the UN in Geneva, to the United Nations General Assembly, New York, September 10, 1996.

¹⁶³ Boutros Boutros Ghali, Secretary-General of the United Nations, to the United Nations General Assembly, New York, September 24, 1996.

¹⁶⁴ Bill Clinton, US President, to the United Nations General Assembly, September 24, 1996.

¹⁶⁵ Yevgeni Primakov, Minister of Foreign Affairs of the Russian Federation, to the United Nations General Assembly, September 24, 1996.

¹⁶⁶ Qian Qichen, Minister of Foreign Affairs of the People's Republic of China, to the United Nations General Assembly, September 24, 1996.

¹⁶⁷ Hervé de Charette, Minister of Foreign Affairs of France, to the United Nations General Assembly, September 24, 1996.

¹⁶⁸ Malcolm Rifkind, UK Secretary of State for Foreign and Commonwealth Affairs, to the United Nations General Assembly, September 24, 1996.

Chapter Six

Scope: What Kind of Test Ban?

When Bill Clinton announced that Russia had finally climbed on board the interpretation of the CTB's scope and basic obligations that the US President had himself unilaterally decided eight months earlier in August 1995, he declared: *"We have all agreed to go with the so-called Australian language which is a strict zero yield comprehensive test ban treaty. That is the only kind of treaty that can give the people of the world the certainty that they really are seeing the end of the nuclear age of the big weapons."*¹

The scope of a treaty determines the basic obligations and what will be prohibited or permitted. Because of the history and past politics of failed efforts to obtain a comprehensive ban on nuclear testing, the scope negotiations were invested with particular expectations and concerns. At the beginning of negotiations a zero yield interpretation was barely on the table. Even the most passionate test ban advocates regarded it as probably out of reach. More than any other aspect of the treaty, the process of achieving convergence on scope exposed the deep perceptual, political and ideological differences between those who advocated the CTBT as a component of arms control or nonproliferation and those for whom the most important function of the test ban was as a step towards nuclear disarmament.

The competing strategies on scope exposed the underlying conflicts between dominant policyshapers in the NWS, declared and de-facto, with their continuing interest in nuclear weapons; the Western middle powers and arms control advocates in various governments and civil society, whose primary political and security interest in the CTBT was as an impediment to horizontal proliferation and any future nuclear arms race; and the more radical approach of nuclear disarmament advocates among the nonaligned states and civil society. Notwithstanding the importance of the issue and competing interests, this chapter shows that the multilateral negotiating arena in Geneva was practically irrelevant in bringing about the scope outcome. The nuclear weapon states sought to sew up the scope in minilateral P-5 meetings, closed to the rest of the CD. The P-5 negotiations were characteristic of mixed motive bargaining

where the conflicting interests among the dominant states ultimately obstructed achievement of a solution that would have enhanced the common objective shared by all the NWS, namely their desire to retain the right and capabilities to maintain and, ideally, continue to develop their nuclear arsenals. Because of their asymmetrical technological capabilities and political rivalries, they competed with each other over which activities to exempt from the treaty – safety tests, so-called peaceful nuclear explosions and, most acutely, hydronuclear tests above certain thresholds – and so failed to achieve a treaty scope that would have optimised their shared interests.

Considering in chronological order the negotiations on safety tests, hydronuclear experiments and PNE, this chapter examines the processes by which the P-5 became mired in their minilateral negotiations on scope and the factors that contributed to the achievement of a more disarmament-directed outcome than would have been anticipated in view of the dominant military and political interests of the major nuclear weapon players.

Opening Positions: Banning Which Bangs?

The United States opened with an early statement of intent: “The treaty should constitute a comprehensive ban. It should not be a threshold treaty; rather it should focus on nuclear weapons explosions” and prohibit “any nuclear weapon test explosion, or any other nuclear explosion”, language derived from the PTBT.² Russia could see no reason why the basic obligations did not simply reprise the “time-tested language” of the PTBT, adding “underground” to the list of prohibited environments in that treaty. Although Russia denied corridor suspicions that it was seeking to find a loophole for above-ground, contained or laboratory testing the denials did not allay all suspicions.³ An early reference to nuclear tests “which are not dual-purpose in nature”⁴ was also open to suspicion that Moscow wanted to keep its options open on PNE. As shown below, such suspicions were not unfounded, as Minatom officials and Russian diplomats gave contradictory signals on these issues.

Britain underlined that the objective was nonproliferation: “The United Kingdom Government continues to attach importance to the role of nuclear weapons for the preservation of our security now and in the future. But we recognise also that the need to ensure effective measures to prevent the proliferation of weapons of mass

destruction has increased... For us, a successful outcome will mean the conclusion of a treaty which makes a real contribution to non-proliferation by interposing a substantial obstacle in the process of developing nuclear weapons”⁵ Britain was prepared to base the treaty’s scope on the PTBT language, but was more interested in securing provisions for conducting occasional tests under the rubric of maintaining the “safety and reliability” of weapons in its arsenal. Weeks later, the British delegation tabled a proposal to allow nuclear explosions to be carried out in exceptional circumstances to test the safety of nuclear weapons, a position endorsed shortly thereafter by France. Undoubtedly, the UK envisaged this provision as applying onto to the P-5 and not the D-3, although the proposal was not explicit.⁶ For fifteen months, the two European NWS persisted in arguing for the right to conduct safety tests every five or ten years. They encountered widespread opposition that included the United States, Russia⁷ and China, all the non nuclear countries, and British and international arms control and disarmament NGOs.

France explicitly emphasised that the CTBT was to be “a treaty to prohibit nuclear tests, not a treaty to prohibit nuclear arms”, and insisted that it should not harm France’s *force de frappe* and the safety of its nuclear weapons. France said it favoured a comprehensive treaty provided it was universal and verifiable, and with the understanding that deterrent capabilities should be able to be maintained through technological advances, including “the acquisition of simulation capabilities”.⁸ Since France would acquire simulation capabilities only through testing, its early statement of this military objective indicated that it was determined to achieve either the safety tests provision, or a high threshold, or that it would break the moratorium and test before the CTBT became politically locked in.

China’s first major statement to the CD called for “strict, precise, and clear-cut texts”, with “no loopholes or ambiguities which will give rise to different interpretations, misunderstandings and disputes in the future.”⁹ Concerned that the more technologically advanced weapon states would benefit from loopholes for “further development and improvement of nuclear weapons”, China pushed for more in depth negotiations on definition and scope than any of the other NWS wanted.¹⁰ Beijing, which has never signed the PTBT, rejected using its scope as a basis for the CTBT, insisting on newer, clearer language: “instead of copying the texts of some

agreements of the 1960s and 70s, we should arrive at definitions and provisions in true conformity with the purpose of the CTBT, in light of today's reality and possible future situations.”¹¹ On several issues, China's approach diverged from the other four NWS. To the annoyance of Japan and the NATO states, China introduced its familiar position on no first use into the CTBT negotiations. Its proposed language for the basic obligations did not cover PNE, but included legally binding security assurances from the NWS to NNWS party to the treaty and an undertaking by the NWS not to be the first to use nuclear weapons against each other.¹² Warning that the CTBT “should not become another partial test ban or a merely restrictive treaty”, Hou proposed that “it should prohibit, at any place and in any environment, any nuclear weapon test explosion of any form which releases nuclear energy”.¹³ The other NWS viewed such statements as either public relations, made with an eye on the non nuclear weapon states, especially from the G-21, or as indicating that China was still considering whether to join the CTBT or not. By opening its position with goalposts rather far from where the Western states were playing, China – like India, later on – was laying ‘best versus good’ groundwork in the event that it would refuse to join the finished treaty.

The P-5 bandied about the term ‘comprehensive’, but, as noted in Chapter 5, the focus of the secretive P-5 meetings was ‘activities not prohibited’ (ANP) – i.e. types of nuclear explosions or tests that one or other of the NWS wanted to exempt from the scope prohibitions. Before turning to separate consideration of the negotiations and outcomes on ANP, three additional proposals relating to the treaty's scope need to be introduced: banning preparations to test; closing the test sites; and banning laboratory testing.

Sweden, wanted the CTBT to serve “two purposes, nuclear disarmament and non-proliferation”, and proposed a scope provision based on the PTBT language for a “total ban on all nuclear explosions, i.e. also so-called peaceful nuclear explosions”, prohibiting “to cause, encourage, assist in, permit or prepare nuclear explosions”.¹⁴ The controversial inclusion of a prohibition on preparing to test was based on the reasoning that the CTBT should deter would-be violators and not only detect actual violations after the fact. Sweden's ambassador, Lars Norberg, noted that it would be difficult to define and verify preparations for a nuclear test, but argued that it is

“logical in this context to include at least direct preparations leading up to a nuclear test”.¹⁵ Germany swiftly endorsed Sweden’s position on preparations, saying that the scope of the treaty should not only comprise the actual nuclear explosions, but “should also include preparatory or assisting activities directly preceding nuclear explosions”.¹⁶ From then on, it was Germany rather than Sweden that made the running on behalf of preparations, trying as late as February 1996 to include the investigation of “concerns regarding apparently imminent non-compliance” into the treaty sections on consultation and clarification and on the powers and functions of the executive council.¹⁷ Although Germany and Sweden were unsuccessful in their bid to incorporate preparations, their diplomats considered it useful to have raised preparations as a matter of serious concern, as this would be reflected in the negotiating record and may be invoked if the need arose in the future.

The G-21 were most vocal that the CTBT should be a functional step towards nuclear disarmament. They wanted to ensure that the NWS would not get away with delivering another threshold or partial test ban again. To minimise this likelihood, some argued that the test sites should be closed altogether, an approach supported by disarmament NGOs. Iran proposed the closure of the existing nuclear weapon test sites and destruction of testing equipment as a surer way of preventing as well as prohibiting nuclear testing than the Swedish-German position on preparations.¹⁸ Unspoken, of course, was Iran’s worry that including preparations in the scope would require a provision for intrusive inspections that some would prefer to avoid! Iran’s proposal for closing the test sites was endorsed by Algeria, Indonesia, Ukraine, Nigeria and Pakistan, and received the backing of several more, including Mexico, Brazil and Cuba; India also expressed interest. The United States fronted for most of the P-5 when it opposed, on the grounds that the test sites were also research laboratories. Though the ideal of closing the test sites was supported by a wider swathe of NNWS and NGOs, they worried that the US position would make it impossible to implement. The proposal’s supporters did not push very hard, so no text on the closure of the test sites ever made its way into the rolling text.

The G-21 put in a number of joint papers on the purposes and objectives of the treaty. On scope, they unanimously opposed any thresholds or safety tests.¹⁹ Arguing that “comprehensive coverage is needed to prevent vertical proliferation of nuclear

weapons in the future”, Indonesia had also put down markers in February 1994 that the scope of the CTBT should “cover peaceful nuclear explosions as well as testings [sic] through supercomputer simulation”.²⁰ Indonesia carried forward these arguments with a formal proposal to prohibit any nuclear weapon testing activity, whether explosive or not.²¹ Though supported by many G-21 colleagues, this position was dismissed by the Western delegations as impractical, and some accused Indonesia of political posturing.²²

In the compilation of text from the two working groups that was appended as an annex to the report of the Nuclear Test Ban Committee in September 1994, there were two paragraphs of contested language on scope. A further six paragraphs from China on the subject of the “peaceful use of nuclear energy and peaceful nuclear explosions” were opposed in their entirety by almost all the other delegations. As can be seen from the heavily bracketed paragraph below, every scope proposal and even much of the punctuation had been contested by one or more delegations:

[1. Each [State Party] [of the Parties to this Treaty] undertakes [to prohibit, and to prevent, and] not to carry out, [at any place and] [in any environment,] any nuclear weapon test [explosion] [which releases nuclear energy] [in any form or any type], or any [other] [peaceful] nuclear [test] [explosion], [and undertakes to prohibit and prevent any such nuclear explosion] at any place [under [or beyond] its jurisdiction or control] [, with the exception of any explosions which may be authorized in exceptional circumstances] [.] [:]

[(a) in the atmosphere; beyond its limits, including outer space; or under water, including territorial waters or high seas; or

(b) underground.]

2. Each [State Party] [of the Parties to this Treaty] undertakes, furthermore, to refrain from causing, encouraging, [assisting,] [preparing,] [permitting,] or [in any way] participating in, [the carrying out anywhere of] any [nuclear [test] [explosion] referred to in paragraph 1 of this Article] [nuclear weapon test [explosion] [as referred to in paragraph 1 of this Article] or any] [other] [peaceful] [nuclear explosion] [,which would take place in any of the environments described in paragraph 1 of this Article].]²³

In order to explore the dynamics of collaboration and conflict among the P-5 and the role of the non nuclear weapon states and civil society, the rest of this chapter will focus mainly on the conduct and outcome of negotiations on the three major ANP options: safety tests, advocated by Britain and France; peaceful nuclear explosions, sought by China; and low yield, hydronuclear experiments, which were desired by all five, but with different requirements in terms of size.²⁴

The Franco-British Alliance on Safety Tests

The demand by Britain and France for safety tests, though widely opposed, found its way into the 1994 rolling text on scope as a rider “with the exception of any explosions which may be authorised in exceptional circumstances”. The principal argument relied on by British and French diplomats was that the United States and Russia had larger arsenals and more diverse nuclear weapons systems; consequently they had the option of retiring weapons whose reliability had come under question. Britain and France saw themselves as lacking such flexibility, and so wanted the test ban treaty to allow the possibility of testing if “needed”. Between the two states, however, there were differences of view regarding the purpose of such tests. British representatives spoke of the necessity for tests to enable safety improvements to a design to be tested.²⁵ France appeared more interested in testing to ensure the reliability of an existing design. The NNWS unanimously opposed having such explicit exceptions in the treaty. While the majority argued pragmatically that it would be impossible to verify that such tests were not being used for the purposes of developing or modernising nuclear weapon designs, some, along with a number of NGOs, rejected the premise on which the Franco-British proposal was based. The G-21 specifically ruled out safety tests, and both India and Pakistan made individual statements saying, in effect, that weapons whose safety was in doubt should be eliminated.²⁶ A number of NNWS also held that if the CTBT were properly viewed in the context of Article VI of the NPT, one consequence should indeed be to force the P-5 to give up their reliance on nuclear weapons faster than they would otherwise do. Such a consequence was to be welcomed, not circumvented. The United States, Russia and China opposed a routine provision for safety tests in the treaty, preferring their alternative approaches on ANP. The United States, in particular, thought it

would cause unnecessary complications and might be used (by others than Britain and France of course) for cheating.

British NGOs led the opposition, prompted by two conflicting concerns: first, that the UK government was not really serious about safety tests, but using the proposal as a means of slowing down the negotiations, either because of its general opposition to the CTBT or to assist France; or, alternatively, that Britain and France really intended to hold out for safety tests, and would thereby jeopardise the CTBT. NGOs worked with Labour MPs to raise questions in parliament about the British position, the responses to which revealed confusion in the Conservative government. In June 1994, for example, replying on behalf of the MoD to a question from Labour MP Harry Cohen, Defence Procurement Minister Jonathan Aitken said that the British government would “look for a verifiable and effective prohibition of all nuclear tests, with the aim of making a contribution to our international non-proliferation objectives”. Acknowledging that a “minimal programme of nuclear testing” had “previously” been important, Aitken added “we now aim to use and develop alternative technologies”.²⁷ When this was reported as a shift in Britain’s attitude, Sir Michael Weston denied that there was any policy change and said that the UK still wanted the CD to consider the possibility of the treaty having a provision for testing in exceptional circumstances.²⁸ A week later Baroness Chalker, Minister of State for the Foreign and Commonwealth Office, added to the confusion by insisting that “we never made a demand that safety tests should be excluded from the treaty”.²⁹

One explanation for the mixed messages was that British policy-makers had decided to do without safety tests but were continuing to protect the position as a delaying tactic – either to maintain bargaining leverage or to assist French weaponisers who hoped to be free to test after the May 1995 elections.³⁰ With no friends on this issue, Britain and France were put under considerable pressure, especially from Western colleagues, to allow the deletion of their bracketed text on exceptions for safety tests from the compilation of WG. II language and proposals. The two NWS continued to resist, insisting on August 12, 1994 that the option go forward into the rolling text.

Britain and France finally withdrew the proposal on April 6, 1995, at the very last CD plenary before the opening of the NPT Review and Extension Conference in New

York, thus confirming the widespread suspicion that their demand for safety tests had been a delaying tactic. Making a point of sounding as if he was responding to the views of other delegations, despite having ignored their appeals throughout the previous twelve months, Sir Michael Weston announced that Britain had decided to withdraw from the rolling text its language on “exceptional tests” and would support the general scope formulation tabled by Australia in March.³¹ France indicated that it would not oppose the deletion of the bracketed text, but carefully refrained from making any direct comment on the Australian text.³² In what was interpreted as a reference to the P-5 discussions over HNE, Weston stressed that the “scope article in the treaty should not be interpreted as prohibiting the United Kingdom, in common with the other nuclear weapon states, from fulfilling its responsibilities to maintain the safety and reliability of its nuclear weapons”.³³

Low Yields and Competing Thresholds

While Britain and France were pushing for safety tests, the United States had an explicitly stated position that the CTBT should be comprehensive and not a “threshold treaty”³⁴. Contrary to the impression this was intended to give, it was widely known in US policy circles that Washington was working with a definition of zero yield that allowed weapons-related hydronuclear experiments below 1.8 kg.³⁵ Early in the negotiations, two kinds of objections to HNE were raised. Western NNWS argued that they would create verification difficulties, as it would be impossible to distinguish between tests at such low yield without very intrusive verification. The verification argument cut both ways, however, and zero yield opponents could turn the regime-builders’ argument against them by insisting that to have confidence in a zero yield scope would require a very complex, intrusive verification system. The second substantive objection to HNEs was that they would enable the weapon states to circumvent the disarmament purpose of the CTBT. Nonetheless, many NNWS and NGOs initially turned a blind eye to HNE for the sake of achieving early agreement on the CTBT, which they feared would be impossible if HNE were challenged.

Three of the other NWS – Russia, Britain and France – also wanted to be able to conduct HNE, but complicated matters by setting their sights on higher yields than

the United States advocated, to levels that might better be described as low yield nuclear explosions. Furthermore, China put forward a public position opposing HNE and advocating a scope text that would prohibit any explosion-derived release of nuclear energy, while at the same time arguing within the P-5 discussions that if there were to be any threshold at all, it should be much higher than the United States advocated – in the region of 500 tonnes or more.³⁶

The genesis of the US position can be found in the early 1990s, when the nuclear weapons scientists argued unsuccessfully for the proposed test ban treaty to prohibit only nuclear explosions with a fission yield of more than 1 kt. Rejecting the 1 kt argument, the Clinton administration accepted advice that ‘zero’ for the purposes of the CTBT should in practice be 1.8 kg.³⁷ This threshold was defined as the maximum for “one-point safety tests”, based on a calculation of maximum permissible explosive yield if an accident caused the high explosive encasing the nuclear pit to detonate at one point.³⁸ A successful one-point safety test should release only a very small fission yield. If the test fails, however, the yield could be large, from tonnes to even a few kilotonnes.³⁹ Designated “the whoops factor”, the risks associated with malfunctioning HNE added to the potential compliance ambiguities that worried treaty advocates and complicated verification considerations. If the United States’ 1.8 kg threshold were used as a marker, how would a failed one-point safety test be distinguished from an intentional nuclear test explosion?

Ambivalence hardens into Opposition

As noted earlier, the NNWS were ambivalent about HNE. In principle, the preference was for the CTBT to eliminate modernisation possibilities as much as possible. In practice, many NNWS representatives, including Marín Bosch, who chaired the NTB Committee in 1994, initially accepted the view of those scientists who considered HNEs to be of only marginal benefit for significant qualitative design improvements. They reasoned that as long as the threshold was not set at tens of tonnes or above or formalised in any way in the treaty text, allowing ambiguity around the concept of zero yield was an acceptable price to pay to get a CTBT locked in place before April 1995. Indonesia and some of the other G-21 disagreed, but were too marginalised to do more than make statements opposing HNE and laboratory testing. Additionally, many were persuaded by Australia’s view that verifying a strict prohibition of HNE

would be overly expensive and intrusive, placing an unnecessarily high burden on the CTBT's organisation.

Three developments eroded the calculations on which the earlier pragmatic approach had been based: Acronym's revelations about the thresholds being discussed among the P-5; analyses from reputable nongovernmental scientists showing the level of new development, refinement or modernisation that would be possible with HNE even at the US 'one point safety' threshold; and the realisation that conclusion of the CTBT before the 1995 NPT Review and Extension Conference would not be feasible.

The willingness of the NNWS to collude with the P-4⁴⁰ argument that negotiations on definitions (diplomatic code for addressing HNE) would seriously complicate and delay the treaty rested on the hope of concluding a CTBT before April 1995. When the CD recessed, with a 93-page bracketed compendium of proposals after the French and British succeeded in sidelining Marín Bosch's draft treaty text in July 1994, this target date no longer looked feasible.⁴¹ A preparatory committee (PrepCom) meeting of NPT parties followed in late September, the penultimate PrepCom before the 1995 Review and Extension Conference. In a meeting characterised by bad temper and intransigence, the nonaligned states highlighted the CTBT as a major priority in judging NWS compliance with Article VI.⁴² Warning that the NWS might not honour the commitment to negotiate a CTBT if the leverage was lost after the NPT Conference, Iran suggested that the PTBT should be amended to ban underground testing "pending finalisation of the CTBT".⁴³ The pragmatic optimism of the nonaligned states during the first year of the test ban talks was clearly dissolving. As their frustration over the NWS' complacency bubbled over to the 1994 UN First Committee, Mexico and several other NNWS began to reassess their position on HNE. By the time an article appeared in the December 1994 issue of *The Bulletin of the Atomic Scientists* stating that "leading figures among the non-nuclear weapon states would rather have a comprehensive ban that allows hydronuclear experiments than no ban at all", it was no longer true.⁴⁴

As the negotiations progressed, information leaking from the P-5 meetings suggested that there was confusion among the NWS' own experts over distinctions between HNEs, subcritical tests and hydrodynamic experiments (HDE). The other NWS were

openly sceptical of the US position equating zero with 1.8 kg, viewing it as an arbitrary yield to enable the more sophisticated US laboratories to maintain their technological lead over the others. Faced with technical confusion and conflict over whether allowing HNE would harm or facilitate establishment of a norm against nuclear testing, civil society called in the experts. During 1994 and 1995, SIPRI and NRDC each produced analyses of the technical issues relating to the CTBT, including critiques of the technical justification for HNE and the political objectives and implications of the US position.⁴⁵ These reports were transmitted to the Geneva negotiators and foreign ministries in the key countries, where they challenged the official line from the NWS scientists and came to influence some of the positions and arguments put forward by delegations.

While the timing disappointment created the space for questioning HNEs, Acronym's information on the negotiations and the expert technical analyses created a kind of epistemic feedback loop that fuelled further questions and suspicions. By bringing the P-5 debates on thresholds into the public arena, Acronym highlighted their internal divisions and intentions; the scientists responded by analysing the capabilities that different thresholds could sustain; Acronym fed these analyses back to Geneva, where they fuelled opposition from the NNWS and demands for clarification and transparency. The possibility for a norm-based rather than expert-dependent decision opened up when it became obvious that the epistemic actors were themselves divided. Some nuclear scientists and officials claimed HNE were necessary for safety testing. Other scientists and technical experts took the view that the utility of very low yield HNE was marginal. Still others argued that even at very low yields, conducting actual nuclear explosions would provide data useful for refining nuclear weapons, including analysing criticality and equation-of-state measurements.⁴⁶ Particularly compelling, especially for Western-oriented NNWS, were the arguments of Dr Annette Schaper that HNE would provide data that with appropriate computer software could aid horizontal proliferation among states not party to the NPT. Epitomising the transgovernmental character of many epistemic actors, Schaper was a nuclear physicist with the Peace Research Institute, Frankfurt, who frequently appeared as an adviser on Germany's NTB delegation in Geneva, and also collaborated on SIPRI research reports.

The engagement of epistemic actors sharpened the debate but did not offer an easy way out. Among the P-5, there was suspicion that equating 1.8 kg with a safety margin masked US intentions to obtain militarily significant and useful data at that threshold which the other NWS, with lesser technical capabilities, could not, thereby keeping the US ahead of the rest. Russia, the United States, Britain and Israel had conducted HNE, and many assumed that France had the technical facilities and capabilities, even if it may not have used HNE extensively in the past.⁴⁷ That some of these countries sought HNE at thresholds much higher than 1.8 kg suggested an insecurity concerning their levels of technological expertise.⁴⁸ The secrecy surrounding the Chinese nuclear programme was too great for anything but speculation; on the basis of Beijing's ambivalent position regarding HNEs, it was assumed that China did not have a well-developed HNE capability, if any. A published account by a member of the Chinese delegation has since provided information that during the P-5 meetings in March 1994, Ambassador Hou argued that since HNE would produce a nuclear yield, albeit very small, they were "indeed nuclear explosions and should be prohibited".⁴⁹ Colonel Zou's account confirms that Beijing did not have confidence in its expertise to conduct HNE and feared that the US criterion would widen the technical gap between China and the other weapon states. China subsequently inserted scope language into the draft rolling text covering "any nuclear weapon test explosion of any form which releases nuclear energy".⁵⁰

By April 1995, as the P-5 discussions leaked further into the open, the figures under discussion became clearer. As reported by NRDC, Russia and France were seeking to retain the ability to conduct nuclear explosions with a yield between 10 t and 200 t, while Britain wanted around 100 lbs (45 kg).⁵¹ Russia was actually interested in the lower level, around 10 t, on grounds that they "were no less defensible than 100 kg explosions and just as difficult to detect or distinguish from lower-yield tests by means of the international monitoring system".⁵² France wanted anything from 100-300 t.⁵³

Bringing the wrangling among the P-5 over HNE into the open was a deliberate strategy by test ban advocates, and was made possible by the combined efforts of a small number of epistemic actors and norm entrepreneurs.⁵⁴ It worked: pressure intensified on Washington policymakers, as a growing number of delegations began

to emphasise that the CTBT must be “nondiscriminatory”, diplomatic code for opposing differential privileges for the NWS, as had been codified in the NPT. Early in the new year, Marín Bosch, freed from the constraints of his position as NTB Committee Chair, warned about technological advances and HNE subverting the disarmament objective of the CTBT: “What is happening now with regard to nuclear testing is no different from what has been happening in the disarmament field for years: the technologically more advanced nations reach a point where they can discard a certain weapon or weapon-related activity and then they move to ban that weapon or activity for the rest of the world through a multilateral treaty...”⁵⁵ Such concerns were strongly endorsed by many, as the G-21 became more vocal against allowing the nuclear powers to conduct tests that would enable them to continue to develop and modernise their nuclear weapons. Egypt and Iran were particularly concerned by the widely-distributed assessment by some NGO scientists that Israel already possessed HNE capabilities and would benefit from an HNE provision in the CTBT.⁵⁶

During 1994, the difficulties of verifying at very low yields had been evoked as part of a strategy to accommodate HNE. From January 1995, verification doubts became an effective weapon against accepting HNEs. More diplomats started echoing the arguments of civil society experts that permitting hydronuclear testing would complicate verification and risk compliance ambiguities and challenges that could weaken or discredit the operation of the treaty.⁵⁷ As it became clear in 1995 that acceptance of HNEs was far from a done deal, a battle between nongovernmental scientists and US government scientists and officials began to be fought in journals, conferences and Washington policy circles. Scientists and speakers from both sides held meetings and visited Geneva to lobby various delegations, while I ensured that the best of the critical articles and analyses were distributed among the negotiators.

The NRDC report from physicists Thomas Cochran and Christopher Paine was particularly influential. Publicly disagreeing with the US characterisation of HNEs as solely to assure the safety and reliability of nuclear weapons, Cochran and Paine provided arguments and evidence that the tests “indisputably constitute nuclear weapon test explosions”.⁵⁸ According to NRDC’s assessment, nuclear yields of just a few tons would be of significant value to a proliferator, and at higher levels would

increase in their value for the NWS: "At nuclear yields of 100-200 tons, fusion phenomena can be investigated, allowing partial yield verification of the performance of new boosted-fission weapons, including new designs for the 'primary' or triggering component of much more powerful two-stage thermonuclear weapons."⁵⁹ They concluded: "Since the marginal value of hydronuclear and other low yield tests for insuring the safety and reliability of existing stockpiled weapons is small in comparison to their associated verification complexities and proliferation risks, such tests should be explicitly banned under the CTBT."⁶⁰ The NRDC arguments echoed the November 1994 "JASON" report on Stockpile Stewardship⁶¹ and prefigured the August 1995 JASON report on nuclear testing, on which Clinton based his decision to drop the US claim for HNE, discussed below. Cochran and Paine went further and proposed treaty language for an Article I scope provision that would explicitly encompass a ban on HNE.⁶²

For the Geneva negotiators, France's nuclear testing announcement in June 1995, just after the NPT had been indefinitely extended, was compounded by rumours that the Pentagon had renewed its demand for a test ban threshold of 500 t. These rumours were given credence by information from American NGOs and a statement by US Secretary of Defense, William J. Perry, who publicly acknowledged that yields from zero through "a few pounds" to "even several hundred tons" were being considered within a reopened debate in the Clinton administration.⁶³ Moreover, despite Perry stressing that the United States did not plan to break its moratorium and that no decisions had yet been taken on whether to advocate a threshold or not, transnational civil society raised concerns about a possible resumption of testing by the United States.⁶⁴ In Washington, Tom Graham, who had led the US delegation at the NPT Review and Extension Conference, also waded in, arguing that adoption of such a threshold would be "a serious breach of trust".⁶⁵ Through Acronym, London-based NGOs also supplied the Geneva negotiators with information revealing that officials from the British MoD were supporting efforts by the Pentagon and US Joint Chiefs of Staff to obtain a half kiloton threshold.⁶⁶

Although ACDA and the US Department of Energy opposed any 500 t or similar threshold, Director for Arms Control at the National Security Council Bob Bell and several important State Department officials backed the reasserted Pentagon demand

for a 500 t threshold. Bell, a prime mover in the earlier attempts to get US government agreement for a 1 kt threshold, was reportedly frustrated with the inability of their P-5 partners to agree on the CTBT's scope (and ANP in particular) and saw a 500 t threshold as a way to end the wrangling.⁶⁷ In believing that a CTBT would be possible with such a threshold, Bell had misread the mood of the NNWS. Even in July 1994, when many NNWS were willing to accommodate HNE in order to make certain of the CTBT before the NPT extension decision, a 500 t threshold would have been difficult for them to swallow. By June 1995, that chance had gone completely.

For much of 1995, the G-21 had been divided and ineffective. As Chair of the negotiations in 1994, Marín Bosch had managed to keep most of the nonaligned states on side. Yet his attempts to put forward an early draft text were thwarted in part because Érrera was able to manipulate rivalry and suspicions among key G-21 delegations, thereby dividing them against him. The nonaligned states had split into several factions in the run-up to the NPT Conference and their inability to unite in time behind a practical alternative to indefinite extension, such as a 25 year rolling extension, had contributed to the difficult dynamics at the Conference and afterwards in the CD. After the NPT extension, and as public anger at the French announcement and US threshold debates mounted, the G-21 pushed for a multilateral debate devoted to scope and basic obligations. The NTB Committee and Working Group 2 had held few multilateral discussions on scope because it was assumed that until the P-5 had come to their decision, there was little to talk about. In response to the G-21 demands and in view of the growing disquiet about US and French intentions, Ramaker decided to hold a full working group discussion on scope. His intention was to lift the issue away from its "privatisation" among the P-5 and reassert the multilateral responsibilities in the negotiations, and he made a point of encouraging the G-21 to participate.

The session on scope was convened on June 27, 1995. India and Indonesia both tabled proposals to define the scope so as to exclude HNEs and laboratory nuclear testing. Where Indonesia's draft text prohibited "any nuclear weapon test or any nuclear explosion", with the intention of ruling out nuclear weapons-related laboratory testing, whether explosive or not,⁶⁸ India had seized on the NRDC

approach and proposed draft text to define a nuclear explosion. Prior to taking this initiative, India's ambassador, Arundhati Ghose, had consulted with fellow members of the G-21, gaining some but not unanimous support for this proposal:

“1. Each State Party undertakes to prohibit and to prevent, and not to carry out, any nuclear weapon explosion, or any other nuclear test explosion, or any release of nuclear energy caused by the assembly or compression of fissile or fusion material by chemical explosive or other means, at any place under or beyond its jurisdiction or control.

2. Each State Party undertakes, furthermore, to refrain from causing, encouraging, assisting or in any way participating in the carrying out of any nuclear weapon test explosion or any other nuclear explosion.”⁶⁹

British, Australian and German diplomats immediately derided India's proposal, which differed from the NRDC language in three significant respects. They pointed out that it would permit PNE, which India said it opposed, and prohibit inertial confinement fusion (ICF) experiments, which India was interested in developing. Furthermore, it would extend the obligation to areas beyond a state's jurisdiction or control, which would be impossible to implement. The Indian delegation offered to discuss revisions and invited others to explain their difficulties and help work out a more satisfactory text, but received no takers from Western delegations, who preferred the existing Australian formulation on scope.⁷⁰ Neither India nor Indonesia really expected their proposals to get anywhere, but they signalled a decisive break from the G-21's earlier acquiescence and added to the perception that the nonaligned were asserting themselves more forcefully in the negotiations.

Though it did not result in any breakthrough in the negotiations, the June 27 debate on scope crystallised opposition to the notion of any kind of threshold. In my email despatch that week, I summed up the attitudes of key delegations and concluded that “if the NWS want a threshold ban they will have to conclude it among themselves outside the CD, but if they do that, it will fail to have a positive effect on the nonproliferation regime and could even be counterproductive; the only CTBT that will emerge from the CD now will be zero threshold... The NWS need to evaluate the whole proliferation picture and decide which they want more: a CTBT or continued testing. They will not now get both.”⁷¹

The Push to Zero

It is widely accepted that the crisis provoked by President Chirac's decision to resume French testing influenced the CTB negotiations. French diplomats have even claimed credit for bringing about the essential breakthrough on scope.⁷² Before such a claim can be accepted, how the crisis over French testing came to play a constructive role, if it did, requires closer analysis. In relation to the French view that without simulation capabilities they could not join a CTBT, Chirac's go-ahead to test undoubtedly cleared the way for the treaty in terms of France's domestic policymaking process. Within the CD, the explanation for breaking the moratorium given by Érrera on June 15 cited these two reasons for conducting the further nuclear tests as if they were inextricably linked. In a long defence of Chirac's policy he argued that France had suspended its tests in April 1992 before completing some essential experiments and that further tests were needed to enhance simulation capabilities to ensure the safety and reliability of its weapons. Érrera concluded his statement with the assertion that far from harming the CTBT, resuming testing confirmed France's commitment to the negotiations, for "this final series of tests is precisely to enable us to end our testing permanently... without resuming our tests we would not be in a position to adhere to [the CTBT] in 1996".⁷³

The French decision had been communicated in advance to its allies among the P-5, who made little or no public comment. Érrera's arguments also appeared persuasive for a number of Western NNWS, who limited any comments they made to mild expressions of regret or concern, while noting that Chirac had stated his intention to conclude the tests before May 1996 and be ready to sign the CTBT thereafter.⁷⁴ Others, particularly from countries based in and around the Pacific, were more outspoken in their opposition, alluding particularly to the commitments recently undertaken in the NPT Conference. Japan called the French announcement a "betrayal of the trust that the non nuclear weapon states had in the nuclear weapon states".⁷⁵ New Zealand expressed "outrage" and rejected the argument that further tests were needed to ensure the safety of the French nuclear arsenal before the CTBT entered into force.⁷⁶ The Australian ambassador, Richard Starr, read statements on behalf of his own government and of the South Pacific Forum governments. These rejected Érrera's assertion that the nuclear tests were consistent with the agreement on "utmost restraint" adopted unanimously by NPT parties six weeks earlier. Australia

also put its money where its mouth was and temporarily froze cooperation with France on defence-related matters.⁷⁷ Switzerland referred to the “moral incompatibility” between the resumption of nuclear tests and the NPT commitments undertaken at the recent conference, noting that “experts are not unanimous on the technical need to conduct tests in order to maintain the safety of [nuclear] weapons”.⁷⁸ Mexico’s new ambassador, Antonio de Icaza, noted that the proposal for adoption of an immediate moratorium on nuclear testing, tabled by his country during the NPT Conference, had not been accepted solely because of the opposition of “certain nuclear powers”. Linking the French resumption of testing with China’s test on May 15 and “the statement by a senior United States representative to the effect that his country might also resume testing”, de Icaza warned that such developments “do not create a propitious climate” for implementing the NPT obligations.⁷⁹ France and the other weapon states, with indefinite extension of the NPT safely in the bag, did not seem to care.

The close proximity between Chirac’s decision to resume French testing and the reopened US interagency debate over higher thresholds greatly increased anxiety among the NNWS and hardened the positions of some nonaligned delegates. With Russia, China and Britain keeping quiet in the CD on both developments, conspiracy theories circulated in Geneva, whereby the P-5 would ratchet up the threat of a high threshold or pose the risk of another failure to achieve a CTBT in order to panic nonaligned negotiators into accepting a non-explicit HNE provision at a “more reasonable” level.

During this time, the CD was a buzzing, paranoid hive of rumour, leaks and suspicions. Subsequent interviews suggest there was no conspiracy and little strategy among the US agencies or the NWS.⁸⁰ Even at the time there was no evidence beyond circumstance and coincidence to justify the conspiracy theories, which chiefly testified to the mood of hostility and negativity in the CD. Though Britain did not formally comment on the French and US developments, Lord Henley, UK Parliamentary Under-Secretary of State for Defence, provoked anger among British NGOs and Labour MPs when he refused to rule out further British tests if the United States lifted its moratorium. As for France breaking its moratorium and concerns that

this might derail the CTB negotiations: “it is entirely a matter for the French themselves to decide whether or not they wish to test”.⁸¹

During late June, the debate over the purpose and scope of the CTBT ranged back and forth within the Clinton Administration.⁸² Fearing that the prospect for a genuinely comprehensive test ban was slipping away, US NGOs had quickly mobilised. They circulated information showing that with a threshold of 500 t, not only hydronuclear experiments, but also ‘whisper-boost’ tests and even the full yield field testing of mini- and micro-nuke designs could be conducted. They argued that such a threshold would keep the nuclear arms race going and encourage would-be proliferators.⁸³ The Physicians for Social Responsibility, NRDC and other Washington-based NGOs rallied a group of 24 Senators and 113 Representatives to sign letters urging Clinton to support a total, zero yield test ban. In a strategy that echoed Linus Pauling and Pugwash 35 years earlier, civil society utilised its grassroots networks to collect over 35,000 letters and messages from all over the United States, which they despatched to the White House and the Department of Energy.⁸⁴

Hazel O’Leary, Clinton’s Energy Secretary, had already shown she was willing to challenge the US defence and nuclear weapon establishments when she hired arms controllers from NRDC, the Carnegie Endowment and other liberal think tanks to advise on issues relating to the nuclear laboratories and cooperative programmes with Russia. Not only was O’Leary viewed as a strong supporter of the test ban, but she had also demonstrated her commitment to more open government by releasing substantial documentation, hitherto classified, relating to health, safety, accidents, and information from health and environmental studies around US nuclear facilities.⁸⁵ In early 1995, O’Leary had commissioned the JASON Group – highly qualified experts from the US nuclear laboratories and scientific establishment who had previously written an influential report on stockpile stewardship⁸⁶ – to do a further report, on nuclear testing. This second JASON Report, made public on August 4 during a Senate debate on HNE, concluded that low yield, sub-kiloton tests would be of marginal utility in ensuring stockpile safety.⁸⁷ Test ban advocates in the United States, Britain and Geneva made sure that the JASON Group’s findings were widely distributed and reported outside of Washington policy circles, particularly to governments and media. The JASON Group’s technical arguments reinforced

O'Leary and senior officials in both the DOE and ACDA in their opposition to the 500 t threshold pushed by Bob Bell and the Pentagon. Moreover, even the nuclear laboratories were divided: some scientists wanted to be able to continue conducting nuclear explosive testing, but other divisions had vested interests in the high-funded projects contained in the stockpile stewardship programme that had been established in 1994 as an expensive payoff to the labs for giving up testing.⁸⁸

Throughout July and early August 1995, test ban advocates had ensured that the White House was flooded with letters and emails from all over America, backed up by copious pro-test-ban editorials in dozens of local newspapers (deemed an important mechanism for influencing congressional representatives). The White House also received higher than usual levels of correspondence from members of the US Congress and from abroad, from other sectors of civil society, such as church groups and schools, and from US allies, particularly parliamentarians and retired, senior military officials. Faced with the greatest pressure exerted on a US President on nuclear issues since the 1980s, Clinton took the decision to back a zero yield CTBT.

France was also under pressure, but not from the CD. It was clear that the French had strategised and prepared for opposition. Although Érrera spiritedly defended his government against the criticisms in the CD, they were neither unexpected nor particularly hard hitting. What did take France by surprise was the international reaction outside governmental circles, as demonstrations disrupted French diplomatic residences and companies all over the world.⁸⁹ A French mission in Australia was set on fire (though Australian NGOs were quick to dissociate themselves and condemn the arson attack). Boycotts against French goods, especially wine, were started in several regions, not insignificantly affecting trade in the Pacific, parts of North America, and a number of major importers in Japan and Scandinavia. In news stories in France and around the world, crates of French wine were shown being poured down drains. Though Germany's government said little, German shoppers boycotted French goods in significant numbers. The boycotts were largely a spontaneous response by citizens, though they were encouraged by various national and international NGOs.⁹⁰

Ten years after the *Rainbow Warrior* had been bombed by French secret service agents in Auckland harbour, a dramatic and violent boarding of Greenpeace's second *Rainbow Warrior* by French naval commandos near the Moruroa test site in July 1995 was replayed and circulated around the world.⁹¹ Such sounds and images helped to galvanise public outrage against France and muster support for the consumer boycotts. By late summer 1995, French radio and television news and discussion programmes were carrying fraught interviews with farmers and wine producers on the issue. While most seemed to be unconcerned about the nuclear testing *per se*, they accused the government of not doing enough to mitigate the bad publicity and economic damage to French producers.⁹² While it is not possible to identify which forms of protest were most effective, their combined effect reportedly caused Chirac to complain to an aide, "Why didn't someone tell me that this was the 50th anniversary of Hiroshima?"⁹³

The first indication of a shift in the French position came on August 9, in a Chicago radio interview with a French Foreign Ministry spokesperson, Yves Doutrieux, and the Australian ambassador to the United States, Don Russell. Doutrieux prematurely announced that France would accept the Australian scope text, as tabled in March 1995. When asked if the French decision meant zero and if it ruled out hydronuclear testing, Doutrieux confirmed "zero".⁹⁴ The next day, Érrera informed the CD that France envisaged a "truly comprehensive prohibition" and would endorse the Australian scope language prohibiting "any nuclear weapon test explosion or any other nuclear explosion". Having crossed this difficult line, Érrera went on to tell his colleagues that a new approach to the negotiations was needed in order to achieve the goal of a CTBT by Autumn 1996.⁹⁵

The French announcement was followed just one day later, on August 11, by a speech from President Clinton, who committed the United States to "a true zero yield ban" on all nuclear explosions.⁹⁶ With this decision, Clinton circumvented the disagreements over threshold and yield in his own administration and among the P-5, and he simultaneously boosted the CTBT talks in the CD, which had become bogged down and dispirited. At the same time, he sought to shore up support among Republicans and in the Pentagon and nuclear weapon laboratories by claiming that he considered "the maintenance of a safe and reliable nuclear stockpile to be a supreme

national interest of the United States” and committing to a programme of six safeguards, including a well financed long-term commitment to the ‘Science-Based Stockpile Stewardship’ programme.⁹⁷

Bypassed and Disgruntled: Reluctant P-5 Acquiescence

British MoD officials were reportedly furious at having been sidelined by the United States (which engaged in no consultations, but informed the UK government just before Clinton’s announcement on the zero yield) and by France, whose delaying tactics Britain had supported during the previous 18 months. Dependent on the US test site in Nevada, however, the British had no choice but to accede more or less gracefully. In September, therefore, Weston told the CD that having carefully studied the statements by Clinton and Érrera he wanted now “to put on record my government’s position that the CTBT should not permit any nuclear weapon test explosion involving any release of nuclear energy, no matter how small”. He said that Britain attached the same conditions as the United States, related to the retention and maintenance of its nuclear stockpiles and design resources, and echoed the US’s asserted connection between the safety and reliability of nuclear arsenals and supreme national interests. Twice emphasising that as a nuclear weapon state, Britain continued to bear responsibility for maintaining “the safety and reliability of our nuclear deterrent” Weston asserted that the CTBT “must not prevent us from fulfilling this responsibility”. Now that Britain was with the virtuous, Weston could not resist challenging China and Russia to do likewise: “it would contribute greatly to the progress of the negotiations if those NWS who have not already done so would confirm that they share this view too”.⁹⁸

Russia, too, was furious about the zero yield decision, and took its anger out in the negotiations. Though President Yeltsin stood beside Clinton and nodded and smiled when the American President closed a summit meeting on October 23, 1995 with the announcement that both supported a fully comprehensive, true zero yield test ban, it took another six months before Russia formally accepted that position.⁹⁹ At a further summit in April 1996, Clinton again tried to include Russia when he said that “we have all agreed to go with the so-called Australian language which is a strict zero yield comprehensive test ban treaty. That is the only kind of treaty that can give the people of the world the certainty that they really are seeing the end of the nuclear age

of the big weapons". Yeltsin voiced agreement this time, mumbling that "all, to the very last one, agreed that this year we've got to sign the treaty on banning ... any size of test forever..."¹⁰⁰ The position was subsequently formalised by Russia's ambassador to the CD on May 14, 1996. Remarking, somewhat to the surprise of his diplomatic colleagues, that "the Russian delegation has always argued that this treaty should contain no threshold restrictions whatsoever", Berdennikov confirmed Moscow's support for the Australian scope on the understanding that it did not contradict the provisions of the 1963 PTBT and therefore extended the PTBT provisions to the underground environment. Accordingly, Russia accepted that "any nuclear weapon test explosion or any other nuclear explosion in any environment will be banned forever and without any 'thresholds'".¹⁰¹

In relation to this, Berdennikov added, Russia would need to conduct "nuclear stockpile maintenance activities". He listed five measures that closely resembled Clinton's August 1995 safeguards: implementation of a programme to ensure the safety and reliability of the Russian nuclear arsenal without conducting nuclear explosions; continued support and resources for Russia's research infrastructure and expertise; retention of a "basic potential" for renewing nuclear test explosions if need be; the continuation of activities aimed at improving capabilities in monitoring the nuclear test ban; and further improvement in information gathering and intelligence related to "possible concealed development of nuclear activities or other activities conducted by third countries that could be relevant for nuclear weapons purposes". The statement also contained a sixth condition, similar to that of the US, British and French assertions on supreme interests, that "if Russia's supreme interests are threatened, it will use its right to withdraw from the treaty in order to conduct all necessary tests which would be called for if there is no other possibility to establish the high level of safety or reliability of any of the key types of Russian nuclear weapons".¹⁰²

By the end of March 1996, Beijing, which had appeared to sit on the fence, made virtue of necessity by reminding everyone that China had consistently advocated that the CTBT scope should exclude any threshold and welcoming that other countries had come around to this position. In view of the continuing resistance to defining a nuclear weapon test or explosion, and since there appeared now to be a common

understanding that the Australian scope formulation would be interpreted to mean zero yield, China agreed to withdraw the phrase “release of nuclear energy” from its scope proposal in the rolling text. At the same time Sha Zukang signalled a review of China’s position on satellites and EMP. In making these concessions, he called for similar flexibility from others and reiterated China’s requirement regarding PNE.¹⁰³

An issue that many had regarded as a bargaining chip for China turned out to have been of deeper significance. How the PNE question was resolved forms the third section of this chapter.

‘Peaceful’ Nuclear Explosions?

China first raised the question of not prohibiting PNE in its structural outline paper in March 1994, insisting that nothing should obstruct the development and peaceful uses of science and technology. The PNE position was justified, like China’s proposals for basic obligations on no first use and security assurances, in terms of what were presented as long-standing issues of principle, in this case the separation of military and peaceful uses. By early 1996, after Britain, France and the United States had formally given up their demands for safety tests and HNE, the widely held assessment that PNE were a bargaining counter had be reconsidered as China’s position appeared to become ideologically entrenched.

CD members were bemused to find China stubbornly hanging on to the demand, despite the strong and almost unanimous opposition to PNE, not only from its fellow NWS and their allies, but also from the majority of nonaligned states, with whom China traditionally emphasised common “third world” cause. Despite acknowledging that PNE had only been conducted by the United States and the Soviet Union and that these countries’ experts had conflicting assessments on the economic and environmental impact, a senior Chinese general told the NTB Committee that “these differences are not sufficient to negate the potential technological benefits of PNE or to provide a good ground to ban PNE as a technology”.¹⁰⁴ The kernel of China’s case was summed up by Sha Zukang: “As a populous developing country with insufficient per capita energy and mineral resources, China cannot abandon forever any promising and potentially useful technology that may be suited to its economic needs.”¹⁰⁵

Linking PNE with Development

The history of so-called peaceful nuclear explosions is complex. During the 1950s and 1960s, the United States carried out its 'Plowshares' programme of nuclear explosions for civilian purposes, but abandoned it in 1977, deeming that the costs and problems outweighed any benefits. The Soviet Union conducted more than a hundred explosions, mostly for large scale excavation and construction work, and for a time assessed the utility of PNE more positively.¹⁰⁶ At Soviet insistence, a right for non nuclear weapon states parties to the NPT to receive the "potential benefits from any peaceful applications of nuclear explosions" was included in Article V of the NPT in 1968, though the language was ambiguous about whether anyone other than the defined NWS would be authorised to conduct PNE.¹⁰⁷ The USSR eventually gave up its programme in the 1980s, amid growing economic and environmental concerns, but Russia's position on PNE was from the beginning of the CTBT negotiations somewhat equivocal.

As well as China, Iran and Algeria initially expressed concern that banning PNE might impede development for some states, but they stopped short of proposing that such explosions be permitted. Though they later seemed to have dropped the issue, Iran's draft treaty text of February 1996 contained a cleverly constructed provision that could have served as a potential loophole for PNE. Apart from these two G-21 members, the non nuclear weapon states were overwhelmingly opposed to PNE, as were Britain, France and the United States. Due to its divisions, the March 1994 working paper of the G-21, endorsed by India and Pakistan as well as Algeria and Iran, was decidedly ambiguous, stating that the CTBT should result "in the permanent banning of all nuclear test explosions, including all such explosions underground". The statement also specified that the treaty "should not contain any provision that could be interpreted as restricting the transfer of nuclear technology for peaceful purposes".¹⁰⁸

India complicated things for China by a clever tactical manoeuvre. To counter the fear expressed by many negotiators that PNE would provide a back door to nuclear proliferation, China had proposed that PNE be conducted only by the nuclear weapon states and under the strictest international control. India put forward an amendment

that included “States Parties which had conducted a peaceful nuclear explosion” among those who could carry out PNE.¹⁰⁹ India’s intention appears to have been twofold. Firstly, the amendment was another tool in New Delhi’s quest for ‘status’ among the nuclear powers, consistent with its strategic objective of undercutting the exclusive definition contained in the NPT. Since India did not expect to win this recognition, its second purpose was to cause additional problems for China. Despite its close relations with China and probably concerned that India could benefit militarily from any PNE provision, Pakistan spoke explicitly against PNE, stating that “the so-called peaceful nuclear explosions contribute towards nuclear proliferation”.¹¹⁰

Almost isolated on PNE, China invoked international principle, citing the right to PNE in the Treaty of Tlatelolco and Article V of the NPT.¹¹¹ Australia promptly led 41 NPT parties to update (and in effect, repudiate) the Article V provision.¹¹² As described in Chapter 5, though Main Committee III (including, reluctantly, China) agreed to Australia’s interpretation, the 1995 NPT Review and Extension Conference failed to adopt its final document. As a consequence, on the grounds that the Main Committee III interpretation had no force, China continued to evoke the NPT Article V provision and the various ritual endorsements of it that had appeared in the Report of the 1985 NPT Review Conference, insisting that as this was the last NPT Conference to adopt a final document, it must take precedence over any subsequent discussion on PNE.

Thwarting Russian and Iranian Compromises

As already noted, few appeared very concerned about China’s advocacy of PNE during the first year of negotiations. By the end of 1995, however, there was growing concern that PNE meant more to China than an expendable bargaining chip, for Beijing continued to devote considerable resources and prestige to fighting for this provision against the almost unanimous opposition of the rest of the CD. Unexpectedly, in February 1996, China’s solitary campaign for PNE was given a boost. First, Russia began circulating some ideas for a PNE provision based on the 1977-1980 tripartite talks; then Iran’s draft treaty, the scope text of which appeared to prohibit all explosions, included a procedure for considering and permitting PNE in exceptional circumstances. Russia’s ideas, which were never formally proposed, were

for a treaty-endorsed moratorium on PNE until they could be conducted so as to preclude any military benefit. Iran's draft text gave the Conference of States Parties responsibility for considering "in exceptional circumstances and in the case that the real benefit of nuclear explosion [sic] for the sole purpose of purely peaceful scientific research and civilian applications are demonstrated... a specific request for conducting a peaceful nuclear explosion." A PNE would only go ahead if four-fifths of the Conference of States Parties agreed, and with verification "to ensure that it will be conducted for purely peaceful purposes."¹¹³ Assessing that this condition would never be met, several states which had hitherto opposed PNE expressed interest in the proposal.

From the beginning, Russia's position on PNE had been equivocal. The Geneva delegation would neither fight for PNE nor speak out against them. They maintained the position that Russia would not obstruct consensus on banning PNE. At the same time, behind the scenes there was considerable cooperation between officials and scientists from Minatom and their Chinese counterparts, with Minatom providing extensive data to support China's claims that the option could be safe and economically viable for a developing country and that PNE could be distinguished from nuclear test explosions and not included in the total ban.¹¹⁴ Russia's two-faced approach was no mere tactic, but the consequence of contending interests and attitudes between the foreign ministry and Minatom, with the defence ministry divided.¹¹⁵ Russia's moratorium suggestions in early 1996, presented as an attempt to prevent PNE becoming a treaty-breaking issue, may also have been an attempt to appease Moscow's warring domestic interest groups.

The considerable interest shown to the Iranian and Russian proposals for regulating but not prohibiting PNEs indicated that an unexpectedly large number of other states had come to fear that China was not going to back down.¹¹⁶ What happened next reveals a significant difference between those among the NNWS who prioritised achieving an agreed outcome and those for whom the substance and content of the agreement was more important. The first group were prepared to accept any workable compromise, and so looked favourably on the Russian or Iranian suggestions. The second group, though some initially welcomed the compromises, were persuaded to

oppose them once they were shown that the Russian and Iranian solutions contained underlying threats to the regime and the wider, disarmament objectives of the CTBT.

NGOs also underestimated the strength of China's position on PNEs, having viewed it as a hold-over from the 1960s that would never be taken seriously.¹¹⁷ The generally positive diplomatic response given to the Iranian proposal for including PNE for consideration by the Conference of States Parties shocked opponents into action. Concerned that what was being considered in the Iranian-Russian approaches could seriously undermine the disarmament aspect of the CTBT, I devoted a larger than usual section of my February reporting to make the argument that any provision along the Russian-Iranian lines could be used to establish a right to conduct further research and experimentation on nuclear warhead design. Since the nuclear device used in a PNE is essentially indistinguishable from one which could be used as a bomb, proving that there would be no military benefit would be a very difficult task; hence both the Russian and Iranian suggestions could be construed as an invitation to nuclear physicists, laboratories and interested governments to set up design teams to develop ways to satisfy the requirement that no military benefit should be obtained. The right to unlimited laboratory research was implied in the requirement to demonstrate this claim in support of a PNE request. Moreover, under the treaty's founding principle of nondiscrimination, Iran's formulation appeared not to be limited to the P-5, but would extend to all states parties to research and develop nuclear devices for PNE. If so, it would contradict the NPT restrictions on NNWS; if not, it would enshrine and perpetuate nuclear research and development by the five NWS and any non-NPT member that became a state party to the CTBT. Questioned about what they intended, Iranian diplomats gave ambiguous responses, reiterating that the CTBT should be nondiscriminatory, but also in conformity with the NPT.¹¹⁸ I concluded my analysis of the Iranian PNE provision by stating "what started out as a seemingly benign way of making concessions to China while ensuring that PNE would never be conducted, may well turn out to be a life-saver for the nuclear weapon laboratories, reinforcing more strongly than ever the privileges of the nuclear weapon states, and setting in place a barrier which would make further restrictions on nuclear weapon development and production more difficult in any future negotiations."¹¹⁹

When *Disarmament Diplomacy 2*, containing this analysis, was distributed to the Geneva delegations and foreign ministries, it caused considerable debate, especially among delegations who had been previously active in opposing PNE, resulting in a flurry of behind-the-scenes discussions with senior diplomats. Subsequently, after having shown initial enthusiasm for Iran's ingenious approach, a growing number of NNWS, led by Japan, Mexico, Canada, Australia and Germany, came out in strong opposition to the Russian and Iranian proposals for dealing with PNE. Mexico's Deputy Foreign Minister, Sergio Gonzalez Galvez, for example, moved Mexico completely away from its initial interest in the Iranian position and reiterated its position that the CTBT should put an end to the qualitative improvement of nuclear weapons and that it should prevent the development of new nuclear weapons. Acknowledging China's argument that there may be some future reason why states would wish to reopen the question of PNE, Gonzalez instead suggested that the amendment process could offer a solution to the impasse. Mexico made the suggestion to ensure that the treaty's scope unequivocally prohibited PNEs, but if offered a sop to reassure China that "the absence of any mention of peaceful nuclear explosions does not in our view mean that this option is ruled out".¹²⁰ As it turned out, an amendment provision was indeed incorporated as part of the solution, but not for some months, as China was not yet ready to give in.

Agreeing to the main provisions and understandings contained in the Australian scope proposal, now accepted by almost all the negotiating parties, Sha Zukang emphatically underlined China's continuing opposition to banning PNE. Echoing his earlier speech to the Olof Palme Centre in Sweden,¹²¹ he evoked a series of arguments based on development principles and former treaties: "...as an important principle, any disarmament or arms control treaty should not hinder the development and application of science and technology for peaceful purposes. Therefore it would be incorrect if [the] CTBT should ban PNE... As a populous and developing country with insufficient per capita energy and mineral resources, China cannot abandon forever any promising and potentially useful technology that may be suited to its economic needs." Stressing that China shared and understood the concern over the possible misuse of PNE, Sha argued that the issue could be "solved by establishing a strict application and approval procedure and an effective international on-site monitoring mechanism for the whole process of PNE".¹²² This was precisely what

the Iranian draft sought to do, but by the end of March, the majority of NNWS had been convinced that this provision could – intentionally or not – legitimise nuclear weapon research under the guise of PNE. With India's 1974 example in mind, few now wanted to take that risk in the CTBT.

The Canadian-Chinese Solution

China, which had been involved in consultations with both Russian and Iranian officials on the two possible solutions, next tried to obtain a PNE provision through a concession-trading package among the P-5. Sha proposed an additional Article II of the treaty in return for Chinese acceptance of the Australian language for Article I. China's proposed Article II would, "notwithstanding the provisions of Article I", offer the possibility of permitting PNE, providing that a Review Conference of States Parties agreed to this by consensus.¹²³ When news of this latest proposal was made public, it was again necessary for NGOs and NNWS to mobilise opposition, with the result that when Ramaker tabled his first Chair's draft treaty at the end of May 1996, it contained no provision for PNE.

Nevertheless, information leaking from the P-5 negotiations suggested that the other NWS were still discussing a possible deal with China, to include an additional article or paragraph in the review section of the treaty providing for periodic review of the prohibition on PNE. Sha Zukang himself brought this into the open on June 6, 1996, stating that "in order to facilitate the conclusion of the treaty within the time-frame as planned, the Chinese delegation is now ready to go along with a temporary ban on PNE".¹²⁴ In an informal proposal on June 18, China advocated a new Article II for the treaty, in which PNEs would be considered by the review conferences. If the parties agreed by consensus, then the conference of states parties would "immediately commence its work with a view to agreeing on arrangements for the possible approval and conduct of such explosions", intended to ensure that military benefits were precluded.¹²⁵ Though this went further than most delegations wanted, there was now a growing fear that Sha's delegation had little room to manoeuvre; it seemed that China had invested so much in the demand for PNE it might not be able to accept the treaty without some face-saving formula. Whatever may have been the original purpose underlying China's insistence on PNE, so much prestige had now been staked on retaining some form of this option that it had been elevated into a treaty-

breaker.¹²⁶ A formula needed to be found that would not compromise the test ban regime. Despite being one of the states that had all along declared an “allergy” to PNE,¹²⁷ Canada offered to work with China on the text and managed to come up with a modified version of the June 18 proposal that the rest of the countries opposed to PNE could live with.¹²⁸

Most significantly, Canada won Chinese agreement to relocate the PNE reference from anywhere near the treaty’s scope to Article VIII, which provided for reviews of the treaty. PNE would not be automatically considered at review conferences, as China had wanted, but could be considered on the basis of a request from a state party. If the review conference agreed by consensus, the next step would have to be recommending an amendment to the treaty. The recommendation would then have to be dealt with under the amendment procedures laid out in Article VII of the treaty, requiring consensus among all states parties at a specially convened Amendment Conference. The Canadian-Chinese text was accepted into the next Chair’s draft and from there to the Review article of the final treaty, as follows:

“.... On the basis of a request by any State Party, the Review Conference shall consider the possibility of permitting the conduct of underground nuclear explosions for peaceful purposes. If the Review Conference decides by consensus that such nuclear explosions may be permitted, it shall commence work without delay, with a view to recommending to States Parties an appropriate amendment to this Treaty that shall preclude any military benefits of such nuclear explosions.”¹²⁹

This is the only provision for PNE in the CTBT. The majority of states were able to accept it because, based on the Article I basic obligations, PNE are unequivocally prohibited. They can only be conducted if the treaty is amended at some time in the future. In fact, the Article VIII provision is more stringent than the normal amendment process, as it requires two stages of consensus: at a Review Conference and again in an Amendment Conference. The likelihood of amending the treaty to permit PNE is now so remote that the possibility should not be regarded as a justification for any research programmes by nuclear weapon laboratories. The Chinese-Canadian compromise met that desirable criterion in bargaining, sufficient ambiguity to allow China to interpret the ban on PNE as temporary, while the other

states parties remain reassured that the ban on PNE would be at least as permanent as the ban on nuclear test explosions.

Much More than a Managed Compromise

With the PNE difficulties finally resolved and India's alternative proposals ignored, the Chair's text reproduced the Australian formulation on scope, which became Article I of the final treaty:

Article I: Basic Obligations

1. Each State Party undertakes not to carry out any nuclear weapon test explosion or any other nuclear explosion, and to prohibit and prevent any such nuclear explosion at any place under its jurisdiction or control.
2. Each State Party undertakes, furthermore, to refrain from causing, encouraging, or in any way participating in the carrying out of any nuclear weapon test explosion or any other nuclear explosion.¹³⁰

The decision to go to a zero yield interpretation on scope in August 1995 was the turning point in the whole CTBT negotiations. A zero yield treaty may have been the demand of the NGOs and many nonaligned states, but it was not in the opening positions of any of the NWS, and was regarded by most NNWS and analysts as unattainable. This chapter has shown that the outcome on scope cannot be satisfactorily explained in terms relating primarily to the power and interests of the dominant states or the diplomatic processes of interstate multilateral negotiations in Geneva. Zero yield became possible when civil society and non nuclear weapon states seized on the French resumption of testing, underscored the norm against nuclear testing and public antipathy towards nuclear weapons, and precipitated a political crisis for decisionmakers in the United States and France.

Safety tests were a peripheral issue. As a delaying tactic, as some negotiators assumed, the value of the safety-test proposal was probably marginal. It may have started out as a genuine demand from the French and British weaponeers, in difficulties as a consequence of Mitterrand's moratorium and Britain's forced cessation due to the US moratorium respectively. Since neither Britain nor France viewed the CTBT as playing a role in disarmament, they had discounted the predicted opposition from the more marginalised non-aligned states, but appear also to have underestimated the opposition to a provision for safety tests among Western non-

nuclear weapon states. When the proposal clearly failed to fly, even with the rest of the P-5, the diplomats may have seen some utility in holding on for bargaining purposes; the high level of opposition from NNWS and NGOs may also have been perceived as increasing the value of their withdrawal, which was timed to gain political benefits just prior to the NPT Review and Extension Conference.

China's insistence on PNEs proved more persistent than any had expected. The early diplomatic assessment that China's position on PNE was a bargaining counter, like its familiar ritual of trying to include a no first use commitment in the CTBT, appears to have been mistaken. But another explanation is possible. China may have initially put PNEs on the table as the first move in a best-versus-good strategy, much as India did when linking disarmament with entry into force. China's analysts would have known well before the commencement of negotiations that PNEs would be unacceptable to the majority of significant negotiators. By insisting on them, bolstered by the moral high ground of the NPT's commitment to peaceful uses of nuclear energy in Articles IV and V, China could therefore retain an option to walk away from the treaty. Like India, China had not made a definite foreign policy decision to support the CTBT. Unlike New Delhi, however, Beijing decided some time during 1995 that it would be more in its interests to go along with a multilaterally negotiated test ban treaty than to stay outside.¹³¹ But by the logic of negotiations and self-image, China could not concede too much or too early. It could not simply withdraw PNE or it ran the risk of losing face, so instead it sought to exact a high bargaining price. There is also evidence to suggest that in the process of presenting a convincing case in Geneva, China's negotiators had persuaded influential domestic interest groups that PNEs had an intrinsic economic or military value, which further complicated efforts to find an appropriate payoff in the endgame.

Unlike safety tests and PNE, little of the pressure for zero yield was exerted in the CD negotiations per se, although one of the strongest regime-proponents – Australia – brokered the text that came to be given a zero yield interpretation. The impetus for zero yield came from civil society and the non-aligned states, most of whom were marginalised in the actual negotiations. The case for a zero yield treaty was based primarily on normative and epistemological grounds constructed and promoted by a

cadre of interconnected civil society actors, few of whom fit the traditional NGO mould.

This crucial breakthrough on scope came about through policy shifts in the United States and France. In France, the domestic realignment was the result of the general election of May 1995. Chirac's decision to conduct a final series of underground tests diminished the French weaponeers' pressure for the treaty to allow testing at yields of several hundred tonnes, thereby undercutting the P-5 stand-off on thresholds, where France (and its ambassador, Gerard Errera) had been one of the strongest and most intransigent of the demandeurs for a threshold in excess of a hundred tonnes. Of equal importance, international outrage against the French tests created a powerful, indirect pressure that forced Paris to make concessions and play a more constructive role in the negotiations.¹³² The US policy shift, by contrast, was heavily influenced by the direct actions and engagement of civil society and congressional representatives in a context where the major domestic agencies were divided. This created space for decision-makers to solicit and pay attention to epistemic arguments about the merits of HNE from scientists like the JASONS (who spanned the governmental and nongovernmental sectors) and from nongovernmental experts, such as NRDC. Internal bureaucratic divisions and the politically constructed crisis over nuclear testing in 1995 also made it more possible for President Clinton to base his decision on the normative, regime-promoting principles of what a CTBT *should* be about.

Because of advances in technology, a CTBT that permitted low yield testing and hydronuclear experiments offered little to proponents of nuclear disarmament, greatly lowering the benefits implied in the concept of diffuse reciprocity, and so reducing test ban advocates' incentives to support the treaty. The zero yield decision was seen to foreclose many modernisation options and therefore raise the value of the CTBT in the eyes of the NNWS. That this was recognised by the United States is clearly demonstrated in the following statement from ACDA director John Holum, who was at pains to emphasise the important and genuine constraints involved in the zero yield decision: "Without nuclear testing the nuclear weapon states will not be able to pursue confidently such technologies as the nuclear explosion pumped X-ray laser, the so-called nuclear shotgun, enhanced electromagnetic pulse weapons, microwave

weapons, and enhanced radiation weapons. This is a real constraint... The true-zero test ban will also place out of reach new 'mini-nuke' and 'micro-nuke' concepts – technologies designed to use nuclear explosive yields in small amounts.”¹³³

Although a zero yield test ban was more than many CTB advocates had dared hope for, John Holum overstated the case that it ruled out modernisation of nuclear weapon systems. Some qualitative developments remain possible through subcritical tests, inertial confinement fusion and other technologies that were additionally funded and deliberately enhanced under the stewardship programme, instituted by the United States as a payoff to its nuclear weapons establishments. Though the other nuclear weapon states were less well equipped for continued modernisation of warheads under a test ban and lacked US resources, they each established similar programmes. Like the United States, all but China made statements on the record in conjunction with their acceptance of zero yield. Nevertheless, despite conflicting assessments of the real significance of the zero yield decision for the sophisticated nuclear weapon programmes,¹³⁴ it was a very hard fight, and one in which transnational civil society was at the forefront.

Notes

¹ President William J. Clinton, Press Conference, G-8 Summit on Nuclear Safety, Moscow, April 21, 1996.

² Stephen Ledogar, February 3, 1994, CD/PV.669.

³ Vladimir Iakimets, a Russian adviser to the Nevada-Semipalatinsk Movement, raised the argument that testing in an above-ground, contained environment such as a laboratory might be legalistically construed neither underground nor in the atmosphere, underwater or outer space.

⁴ Grigori Berdennikov, February 1, 1994, CD/PV.668.

⁵ Sir Michael Weston, January 25, 1994, CD/PV.666.

⁶ Interview with Sir Michael Weston, Matfield, June 11, 2002.

⁷ The Russian delegation in Geneva took a firm stand against the proposal, but some Russian weapons designers expressed interest in the concept of safety tests. See R. Ilkayev, "Military Federal Nuclear Centre", *Associated Press Report No. 3* (November 1994) and Patricia M. Lewis, "The United Kingdom", in Eric Arnett (ed.) *Nuclear Weapons After the Comprehensive Test Ban* (Oxford: Oxford University Press/SIPRI, 1996) p 108.

⁸ Gérard Errera, "*Approche Générale de la Négociation d'un Traité d'Interdiction Complète des Essais Nucléaires*", February 7, 1994 (informal paper to the NTB Committee).

⁹ Hou Zhitong, March 24, 1994, CD/PV.676.

¹⁰ Zou Yunhua, *China and the CTBT Negotiations*, (Stanford CA: Stanford University Center for International Security and Cooperation, 1998) p 12.

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- ¹¹ Hou Zhitong, March 24, 1994, CD/PV.676.
- ¹² Chinese Working Paper, *Basic structure of a comprehensive test ban treaty*, March 30, 1994, CD/1255.
- ¹³ Hou Zhitong, March 24, 1994, CD/PV.676.
- ¹⁴ *Swedish Draft Comprehensive Nuclear Test Ban Treaty*, June 3, 1993, CD/1232. For a useful discussion of this draft, see Maurice A. Mallin, *The June, 1993 Swedish Draft Comprehensive Nuclear Test-Ban Treaty: Implications and Issues for Negotiations*, CNSN Occasional Paper (McLean VA: The Center for National Security Negotiations, Science Applications International Corporation, March 1994).
- ¹⁵ Lars Norberg, 25 January, 1994, CD/PV.666.
- ¹⁶ Wolfgang Hoffmann, 27 January, 1994, CD/PV.667.
- ¹⁷ Germany, draft Working Paper, *Germany's proposed new Treaty language regarding the imminent preparation of a nuclear test explosion in the context of a CTBT*, February 9, 1996 (taken from draft, so no CD number).
- ¹⁸ Sirous Nasser, June 23, 1994, CD/PV.683.
- ¹⁹ Group of 21 Working Paper, *Some key elements of a Comprehensive Nuclear Test Ban Treaty*, CD/1252, March 22, 1994.
- ²⁰ Soemadi D.M. Brotodiningrat, 10 February, 1994.
- ²¹ "1. Each State Party undertakes not to carry out any nuclear weapon test or any nuclear explosion and to prohibit and prevent any such nuclear test or nuclear explosion at any place under its jurisdiction or control. 2. Each State Party undertakes, furthermore, to refrain from causing, encouraging, or in any way participating in the carrying out of such nuclear weapon test or nuclear explosion, as specified in paragraph 1 above." Indonesia, Working Paper, *Draft Article on Scope*, June 29, 1995, CD/NTB/WP.243.
- ²² Indonesia, whose foreign minister, Ali Alatas, had chaired the PTBT Amendment Conference in January 1991, did not take as prominent role in the CTBT negotiations as might have been expected. By NAM tradition, Indonesia coordinates the nonaligned states on disarmament issues in the United Nations and NPT, but its leadership was frequently weak or non-existent, leaving a vacuum that was often filled in the past by India or Mexico, and more recently by South Africa.
- ²³ *Report of the Ad Hoc Committee of a Nuclear Test Ban to the Conference on Disarmament*, CD/1273/Rev.1, September 5, 1994, p 32.
- ²⁴ China's position on HNE was ambivalent. Its formal position was that there should be no threshold at all. If the treaty did contain a threshold, China favoured a relatively high level of up to 500 t, as it lacked confidence in its comparative expertise at very low yields. This dual position was understood and openly alluded to among Geneva delegations but never made explicit, although it was made public in William J. Broad, "Atom Powers Want to Test Despite Treaty, *New York Times*", March 29, 1995.
- ²⁵ According to senior British officials at the time, requests should be carefully defined and have to meet rigorous criteria; they would have to be considered on a special-case basis, granted by the implementing authority and duly verified to ensure that testing was solely for the purposes stated and not new development.
- ²⁶ Group of 21 Working Paper *Some key elements of a Comprehensive Nuclear Test Ban Treaty*, CD/1252, March 22, 1994. Following this statement, India and Pakistan underlined their opposition to safety tests in individual statements to the CD. India specified that "no test should be carried out under the pretext of safety purposes" and that the CTBT "should be comprehensive and not establish thresholds". Satish Chandra, June 2, 1994, CD/PV.680. Pakistan, for its part, argued that permitting exceptions for continued nuclear tests for safety or other purposes "would be unacceptable, as they would be against the very spirit of the treaty...[and] leave the treaty open to exploitation and abuse". In Pakistan's view, weapons whose safety had become doubtful should be dismantled, which would "be a positive contribution to the goal of nuclear disarmament". Ahmad Kamal, June 9, 1994, CD/PV.681.
- ²⁷ Jonathan Aitken, Minister of State for Defence Procurement, *Hansard Official Report (Commons)*, June 14, 1994, WA Col 536.
- ²⁸ Interview with Sir Michael Weston, reported in Rebecca Johnson, *Acronym Email 13*, June 17, 1994 (contemporaneous report, distributed but unpublished).
- ²⁹ Baroness Chalker, *Hansard Official Report (Lords)*, June 21, 1994, col. 170. Perhaps the words were chosen deliberately, since it could be argued that the UK's position was to *include* a provision for safety tests in the treaty.
- ³⁰ President François Mitterrand was committed to maintaining the French moratorium and had publicly stated on French television that despite China's continuing nuclear tests, France would conduct no further tests while he was in power. In contrast, Jacques Chirac, the Gaullist front-runner

for the presidency, had condemned his own party for submitting to Mitterrand's moratorium and had called for 20 more tests before France would accept a CTBT. Rebecca Johnson and Sean Howard, *A Comprehensive Test Ban Within Reach*, ACRONYM 1 (London: The Acronym Consortium, May 1994), p 18.

³¹ Australian working paper, *Draft Article on Scope*, March 9, 1995, CD/NTB/WP.222.

³² Although France had endorsed the proposal for safety tests from very early on, and negotiations on it had been coordinated between the two European powers, Britain was officially the owner of the text and so was able to withdraw it without formal corroboration from France. The decision was jointly coordinated however, as confirmed by both Errera and Weston. See also Rebecca Johnson, *Strengthening the Non-Proliferation Regime: Ends and Beginnings*, ACRONYM 6, (London: The Acronym Consortium, April 1995) p 10.

³³ Sir Michael Weston, April 6, 1995, CD/PV.705.

³⁴ Stephen Ledogar, February 3, 1994, CD/PV.669.

³⁵ See Chapter 4. This is also discussed in Tom Zamora Collina and Ray E Kidder, "Shopping Spree Softens Test-Ban Sorrows", *The Bulletin of the Atomic Scientists*, 50:4, (July/August 1993), pp 23-29; Katherine Magraw, "The United States," in Eric Arnett (ed.) *Nuclear Weapons After the Comprehensive Test Ban* (Oxford: Oxford University Press/SIPRI, 1996); and Thomas Graham Jr., *Disarmament Sketches* (Seattle and London: University of Washington Press, 2002), chapters 10 and 11.

³⁶ See note 14.

³⁷ Within the administration, the 1 kt threshold was pushed hardest by Bob Bell. For an insider's account of this debate and decision, see Thomas Graham Jr, (2002), p 239-241.

³⁸ Implosion-based nuclear weapons are designed so that the high explosive trigger is detonated simultaneously over its spherical surface. One-point safety tests are designed to determine the probability that a detonation initiated at a single point in a warhead's high explosive – if a weapon were accidentally dropped from a height, for example, or hit by an adversary's munitions – would not result in an explosion with a significant nuclear yield. Warheads are characterised as one-point safe if the probability of the nuclear yield from such an incident exceeding 1.8 kg is judged to be less than one in a million. See Katherine Magraw in Arnett (1996) p 124.

³⁹ Eric Arnett, "The comprehensive nuclear test ban" in *SIPRI Yearbook 1995: Armaments, Disarmament and International Security*, (Oxford: Oxford University Press/SIPRI, 1995) p 700.

⁴⁰ During the 1990s, the term P-4 came to be used for the P-5 minus China. It reflected Russia's efforts to harmonise positions with the Western NWS, particularly in the early post cold war years.

⁴¹ "Failing the test ban", leader in *The Guardian*, September 8, 1994. See also Frances Williams, "Opposition to nuclear treaty grows", *Financial Times*, September 16, 1994.

⁴² Thomas Graham described the Third PrepCom (September 1994) in Geneva as a "disaster". Graham 2002, p 245.

⁴³ Rebecca Johnson, *Strengthening the Non-Proliferation Treaty: Decisions Made, Decisions Deferred*, ACRONYM 4, (London: The Acronym Consortium, September 1994), pp 12-14.

⁴⁴ Eric Arnett and Annette Schaper, 'No Hydronuclear Ban', *The Bulletin of the Atomic Scientists*, (November/December 1994), pp 22-23. Feedback loops can sometimes result in mutual influence causing positions to be effectively transposed. In this case, it is interesting to note that when Schaper in her June 1994 paper for SIPRI (Arnett, June 1994) argued that "it might not be easy to achieve a ban on HNE but, because of the great importance of an HNE ban for non-proliferation, the attempt is worthwhile", the majority of NNWS were still inclined to support a pragmatic CTBT without an explicit HNE ban for the sake of a timely treaty. By the time Schaper's article with Arnett was published in *The Bulletin of Atomic Scientists*, suggesting that the choice was between a CTBT that allowed HNE or no treaty at all, opinion amongst the non-aligned at least had already substantially shifted against accepting another threshold test ban.

⁴⁵ See Cochran and Paine, March 1995; and Arnett, 1994, which contained chapters by Eric Arnett, Patricia Lewis and Annette Schaper.

⁴⁶ Collina and Kidder, (July/August 1993); Thomas B. Cochran and Christopher Paine, *The Role of Hydronuclear Tests and Other Low yield Nuclear Explosions and Their Status Under a Comprehensive Test Ban*, (Washington DC: Natural Resources Defense Council, March 1995), and Eric Arnett (ed), *Implementing the Comprehensive Test Ban*, SIPRI Report No 8, (Oxford: Oxford University Press/SIPRI, 1994).

⁴⁷ Arnett and Schaper, November/December 1994, p 23.

⁴⁸ Rebecca Johnson, *Acronym Email*, 8 July, 1994 (contemporaneous report, distributed but unpublished). See also Rebecca Johnson and Sean Howard, *A Comprehensive Test Ban: Setback for an*

early treaty, ACRONYM 2, (London: The Acronym Consortium, July 1994). For NRDC discussion of the French position, see R. L. Garwin, R. E. Kidder and C. E. Paine, *A Report on Discussions Regarding the Need for Nuclear test Explosions to Maintain French Nuclear Weapons under a Comprehensive Test Ban*, (Washington DC: Federation of American Scientists and Natural Resources Defense Council, 1995).

⁴⁹ Zou, 1998, p 13.

⁵⁰ Though China continued to be formally against hydronuclear tests, reports attributed to a senior foreign ministry official in February 1995 indicated that Beijing had not yet decided whether to conduct "small nuclear tests" for the purposes of safety and reliability. P.E. Tyler, "China warns US against developing Asian missile shield", *International Herald Tribune*, February 18-19, 1995.

⁵¹ Cochran and Paine, March 1995, p i and pp 22-25. See also William J. Broad, "Atom Powers Want to Test Despite Treaty", *The New York Times*, March 29, 1995. Dismissed by the P-5 at the time, the accuracy of these figures has subsequently been confirmed by US Ambassador Stephen Ledogar, in his interview with the author, New York, November 2000.

⁵² Senior Russian official in interview with the author, Geneva, March 1995.

⁵³ Rebecca Johnson, ACRONYM 6, (April 1995), pp 9-12

⁵⁴ The main protagonists were Acronym in Geneva, scientists such as Annette Schaper at the Peace Research Institute, Frankfurt (PRIF), Eric Arnett at SIPRI, Patricia Lewis at VERTIC, and US nongovernmental scientists and lobbyists, including NRDC and the Campaign for the NPT.

⁵⁵ Miguel Marín Bosch, January 31, 1995, CD/PV.693.

⁵⁶ Arnett and Schaper, November/December 1994.

⁵⁷ Although reinforced buildings could theoretically be used (hence the suspicions about the Russian preference for listing prohibited environments based on the PTBT), American HNE were all conducted underground because of safety concerns, including the risks associated with the 'whoops factor', and the need to satisfy more stringent environmental regulations if explosions were carried out above ground. The US facilities were located at the Low Yield Nuclear Explosion Research (LYNER) facility, underground at the Nevada Test Site. The facilities and procedures for conducting HNE could therefore appear similar to those used for nuclear tests above an allowed threshold. Without intrusive verification and transparency procedures, HNE would be difficult to distinguish from tests to develop new types of low yield nuclear weapons, such as 'mini-nukes' or 'micro-nukes'. See Eric Arnett, 1995, p 699-702.

⁵⁸ Cochran and Paine, March 1995, p i.

⁵⁹ Ibid. p i.

⁶⁰ Ibid. p vi.

⁶¹ In 1994, Hazel O'Leary, Clinton's Secretary of Energy, had commissioned a report on stockpile stewardship from a group of nuclear weapon specialists, headed by Sidney Drell and coordinated through the JASON division of the MITRE Corporation. The JASON Group, so-called, spanned a spectrum of political perspectives, included a number of former nuclear weapon scientists, and was generally viewed as independent. See Sidney Drell et al, *Science Based Stockpile Stewardship* (McLean VA: JASON/The MITRE Corporation, November 1994, JSR-94-345), especially p 22.

⁶² NRDC utilised the structure of the Australian draft treaty elements of March 1994 for its scope language. See Cochran and Paine, March 1995, p vi.

⁶³ William J. Perry, US Secretary of Defense, press conference, *United States Information Service Facsimile Transmission*, June 18, 1995.

⁶⁴ Martin Walker and Ian Black, "Pentagon steps up fight to resume nuclear tests", *The Guardian*, June 7, 1995; "Nuclear Commitments", leader in the *New York Times*, June 12, 1995; Jessica Mathews, "Waffling on the Test Ban", *Washington Post*, June 12, 1995; R. Jeffrey Smith, "Administration debates Pentagon proposal to resume nuclear tests", *Washington Post*, June 18, 1995; Tom Rhodes, "Pentagon's nuclear tests plan raises concern for treaty", *The Times*, June 20, 1995; John Carlin, "Clinton drops nuclear bombshell", *The Independent*, June 20, 1995; and Stephen Robinson, "US military urges Clinton to resume nuclear testing", *The Daily Telegraph*, June 20, 1995; and Martin Walker, "Clinton sacrifices principle in drive for second term", *The Guardian*, June 20, 1995. In another example of a feedback loop, US and British NGOs played an important role in stimulating the writing of such articles, in giving background information to journalists and, through the Acronym Consortium, in ensuring that the reports reached negotiators in Geneva. See, for example, *Nuclear Proliferation News* issue number 28, (Bradford: Dfax and <http://csf.colorado.edu/dfax/npn/npn28.htm>, June 30, 1995), which was compiled from the following web-based news sources: 'Pentagon seeks resumption of nuclear tests', *Armed Forces Newswire Service*, June 8, 1995; 'Pentagon officials want underground nuclear tests', *AP Datastream News Wire*, June 17, 1995; 'Administration debating

whether small blasts should be conducted', *AP Datastream News Wire*, June 17, 1995; 'United States to decide soon on nuke tests', *Reuter News Reports*, June 18, 1995; and 'Japan asks US not to resume nuclear tests', *Agence-France-Presse International News*, June 19, 1995.

⁶⁵ Graham, 2002, p 247.

⁶⁶ While most of the pressure was carried out behind the scenes, some reached the media. See, for example, James Adams, "Britain presses US to resume nuclear tests", *The Times*, June 25, 1995.

⁶⁷ Unpublished notes of an NGO meeting with Bob Bell, involving members of the Campaign for the NPT (reconstituted as the Working Group on the CTBT) and Greenpeace, Washington DC, July 21, 1995, made available to me by Daryl Kimball.

⁶⁸ In addition to ruling out HNE, Indonesia's text encompassed hydrodynamic experiments and, potentially, computer simulations and other forms of non-destructive assays, as well as PNE. Indonesia, Working Paper, *Draft Article on Scope*, June 29, 1995, CD/NTB/WP.243.

⁶⁹ India, Working Paper, *Draft Article on Scope*, June 29, 1995, CD/NTB/WP.244.

⁷⁰ NRDC was also at pains to distance itself from the Indian proposal, which it considered to be a counterproductive and garbled version of its own intentions. The original NRDC scope formulation read as follows: "Each State Party undertakes not to carry out any nuclear weapon test explosion, any other nuclear explosion, or any release of nuclear energy caused by the assembly or compression of fissile or fusion material by chemical high explosive means, and to prohibit and prevent such explosions or releases at any place under its jurisdiction or control". Cochran and Paine, (March 1995), p vi. NRDC's objectives had also moved forward, as by June 1995 the battle in Washington was between zero yield and 500 tons. Conversations with NRDC scientists and lobbyists, Washington DC, July 1995.

⁷¹ Rebecca Johnson, *Acronym Email*, July 3, 1995 (contemporaneous report, distributed but unpublished). In that email, written from notes summarising extensive off the record discussions that week with diplomats from all the key CD members, I identified the following reasons for the change in the NNWS' attitudes: i) a threshold of tens or hundreds of tonnes, as reportedly discussed among the P-5 and in renewed interagency debates in the United States, would not be tolerated by the non-nuclear weapon states; ii) information provided by NGOs identifying the role HNE and other experiments could play in nuclear weapon research and development had caused a rethink among some NNWS about the value and meaning of a CTBT that permitted HNE; iii) there was a sense of betrayal over the indecent haste with which the NPT extension decision had been followed by P-5 activities – notably, the Chinese nuclear test of May 15 and the June 13 announcement of the French resumption of testing – and discussions that were viewed as incompatible with the commitments made at the NPT conference; iv) the NNWS were no longer willing to trust the "grey areas" in their dealings with the NWS, and wanted everything explicitly agreed; and v) ascribing the date 1996 had caused governments on all sides to feel that they had room to manoeuvre before finalising the CTBT, giving space in which the NWS were testing out high threshold numbers and the NNWS were trying out definitions.

⁷² Author's conversation with Gérard Errera, Geneva, August 1995.

⁷³ Errera also reminded the CD that France had always rejected a link between the moratoria and the CTB negotiations, and he claimed that the decision was no surprise to anyone and did not violate any obligations or responsibilities in the field of nonproliferation. Gérard Errera, June 15, 1995, CD/PV.708.

⁷⁴ Statements by the representatives of various delegations to the CD Plenaries of June 15, 1995, (CD/PV.708) and June 22, 1995 (CD/PV.709). See also Roger Highfield, "How France could limit the fall-out", *The Daily Telegraph*, July 12, 1995; Philippe Seguin, "A Rebuttal: Why France's Nuclear Plan is Serious", *International Herald Tribune*, September 6, 1995; and Philippe Seguin, "Clouded Judgment: French nuclear testing is vital to Europe's joint security", *International Herald Tribune*, September 7, 1995.

⁷⁵ Yukiya Amano, June 15, 1995, CD/PV.708. See also Ian Black, "France rejects Japan's test plea", *Guardian*, June 20, 1995.

⁷⁶ Wade Armstrong, June 15, 1995, CD/PV.708. The use of a strong word like "outrage" is rare in the CD, where whole days can be spent on deciding whether to "note" a particular action or event, express "regret" or go so far as to "deplore" or "condemn".

⁷⁷ Richard Starr, June 15, 1995, CD/PV.708.

⁷⁸ Friedrich Moser, June 22, 1995, CD/PV.709.

⁷⁹ Antonio de Icaza, June 22, 1995, CD/PV.709. In large part due to his opposition to indefinite extension of the NPT, the United States had used Mexico's vulnerability during a serious financial crisis to insist that the Mexican government replace Marín Bosch as Ambassador to the CD.

⁸⁰ Interviews with Sha Zukang (Beijing, October 13, 2000), Stephen Ledogar (New York, November 5, 2000), Grigori Berdennikov (Vienna, July 17, 2001), and Sir Michael Weston (Matfield, June 11, 2002) and conversations with a senior French official (Washington DC, November 2000).

⁸¹ Lord Henley, Oral Questions on Nuclear Disarmament, *Hansard Official Report (Lords)*, June 20, 1995, cols 147-9.

⁸² For example, as noted in *Nuclear Proliferation News*, The *Washington Post* on June 23 reported that a scheduled meeting of key US officials to debate the threshold proposal had been cancelled and the issue shelved. See Ann Devroy and R. Jeffrey Smith, "White House Defuses Nuclear Test Proposal", *Washington Post*, June 23, 1995; "Dispute over 'threshold' explosions could disrupt test ban negotiations", *Nature*, vol 376, July 27, 1995; and Rebecca Johnson, "CTB Negotiations – Geneva Update 20", *Nuclear Proliferation News* 28, (Bradford: Dfax, June 30, 1995). By this time, my informal emails and published reports from Geneva were circulating widely, particularly in the United States, where arms control advocates were routinely forwarding them to government and legislative contacts on all sides of the CTB debate.

⁸³ Factsheets were brought out by VERTIC, Scientists for Global Responsibility, the CTB Clearinghouse and the Working Group on the CTB (formerly the Campaign for the NPT) and possibly others of which the author is not aware.

⁸⁴ I am indebted to Daryl Kimball of the Arms Control Association, Washington DC, for sharing his unpublished research on US NGOs and their work on the test ban.

⁸⁵ See, for example, Peter Gray, "O'Leary v. Deutsch", *The Bulletin of the Atomic Scientists* (November/December 1994), pp 10-12; and Nancy W. Gallagher, *The Politics of Verification* (Baltimore, MD and London: The Johns Hopkins University Press, 1999), p 227.

⁸⁶ See note 71.

⁸⁷ Sidney Drell et al, *Nuclear Testing: Summary and Conclusions*, (McLean VA: JASON/The MITRE Corporation, August 3, 1995, JSR-95-320). The Jason Group was chaired by Sidney Drell and at this time comprised John Cornwall, Freeman Dyson, Douglas Eardley, Richard Garwin, David Hammer, John Kommordiener, Robert LeLevier, Robert Feurifoy, John Richter, Marshall Rosenbluth, Seymour Sack, Jeremiah Sullivan and Fredrik Zachariasen.

⁸⁸ To the dismay of some NGOs, in downplaying the benefits from low yield nuclear tests, the JASON report proposed additional funding for the laboratories to develop other levels of nuclear weapon-related research. See also Lichterman and Cabasso, May 2000.

⁸⁹ Reporting on the boycott of French products in Japan, Hong Kong and other Asian and Pacific countries, and that Japanese and other Asians had also cancelled hotel reservations, The *Washington Post* quoted a senior French official as saying "We expected a few angry outbursts, but we never thought it would get this bad", William Drozdiak, "France's Nuclear Storm: Plan to Resume Testing in Pacific Unleashes Typhoon of Anger", *Washington Post*, July 8, 1995.

⁹⁰ The International Peace Bureau and IPPNW, for example, produced stickers in various European languages, to identify French goods on the shelves with a message against nuclear testing. In the United States, Peace Action, the Women's Action for New Directions (WAND), the Fellowship of Reconciliation and others formed a boycott coalition, which asked French-owned companies to make public statements denouncing the tests or risk being included on lists encouraging the public to boycott their goods as a protest. The lists were disseminated through the emerging internet, but there has been no systematic assessment of their use.

⁹¹ Craig R. Whitney, "Paris Defends Seizing Ship in Atom Test Zone", *New York Times*, July 11, 1995. The sounds of the forcible boarding and arrests, which included chilling screams from campaigners being manhandled by French commandos, were broadcast by the BBC. They occurred on the ten year anniversary of the French secret service bombing of the first *Rainbow Warrior* in Auckland Harbour on July 10, 1985, which increased the embarrassment factor for France. Graham, who was then in the United States, particularly recalls hearing the "young woman staffer broadcast to the world over the radio the sounds of the French military crudely storming the ship". Graham, 2002, p 248.

⁹² During the CTBT negotiations I lived in Ferney Voltaire, where I regularly watched French news and discussion programmes on television and witnessed many heated debates on the harm to French economic interests as a result of breaking the moratorium.

⁹³ Graham, 2002, p 246-7.

⁹⁴ Yves Doutrieux and Don Russell, 'Worldview', *WBEZ Chicago informal transcript*, August 9, 1995.

⁹⁵ Gerard Errera, August 10, 1995, CD/PV.713. See also Hervé de Charette, Foreign Minister of France, "For Both Nonproliferation and a Credible French Deterrent", *International Herald Tribune*, August 22, 1995.

⁹⁶ R. Jeffrey Smith, "US to back total nuclear test ban", *Washington Post*, August 11, 1995.

⁹⁷ Statement by President William J. Clinton, August 11, 1995, reproduced in CD/1340, August 17, 1995; and *Fact Sheet: Comprehensive Test Ban Treaty Safeguards*, The White House, Office of the Press Secretary, August 11, 1995. See also chapter 5.

⁹⁸ Sir Michael Weston, September 14, 1995, CD/PV.718.

⁹⁹ As discussed in Chapters 5 and 7, Russian diplomats expressed anger at the way in which the United States had abruptly and – as they saw it – unilaterally or in collaboration with France gone outside the P-5 negotiations and pushed the scope to zero. They complained that Russia was not consulted before Clinton made his decision, and that the US delegation gave less than a day's notice of Clinton's announcement. As a consequence, Russia not only delayed giving its agreement to the Australian text and zero yield understanding, but also put forward additional and awkward proposals relating to the IMS and took a harder line than expected over on-site inspections and entry into force. These insights come from personal discussions during late 1995 and early 1996 with the author, confirmed in interviews with Victor Slipchenko (formerly deputy ambassador for the Russian Federation in the CTBT negotiations (Vienna, October 8, 1999) and Ambassador Grigori Berdennikov (Vienna, July 17, 2001).

¹⁰⁰ President William J. Clinton and President Boris Yeltsin, Press Conference, G-8 Summit on Nuclear Safety, Moscow, April 21, 1996.

¹⁰¹ Grigori Berdennikov, May 14, 1996, CD/PV.734.

¹⁰² Ibid.

¹⁰³ Sha Zukang, March 28, 1996, CD/PV.733.

¹⁰⁴ General Qian Shaojun, statement to the NTB Committee, January 26, 1996, quoted in Zou, 1998, p 63.

¹⁰⁵ Statement by Ambassador Sha Zukang, at the Olof Palme International Centre, Stockholm, February 5, 1996.

¹⁰⁶ Iris Y. P. Borg, "Nuclear explosions for peaceful purposes", in Jozef Goldblat and David Cox, *Nuclear Weapon Tests: Prohibition or Limitation?*, (Oxford: Oxford University Press, 1988), pp 59-74. For a defence of PNE, see Edward Teller, *The Legacy of Hiroshima* (London: Doubleday, 1962), pp 81-92.

¹⁰⁷ In fact, no NNWS has ever requested permission to conduct a nuclear explosion or asked for one to be conducted on its behalf. Until its nuclear tests in May 1998, India (which remained outside the NPT) had maintained that the nuclear explosion it conducted in the Rajasthan desert in 1974 was for peaceful purposes. Since the nuclear tests of May 1998, Indian officials have been more willing to acknowledge that the 1974 explosion was its first nuclear test.

¹⁰⁸ Group of 21 Working Paper, *Some key elements of a Comprehensive Nuclear Test Ban Treaty*, CD/1252, March 22, 1994.

¹⁰⁹ China's proposal from March 1995 and India's additional language were included in the rolling text issued by the NTB Committee in its 1995 *Report to the Conference on Disarmament*, September 26, 1995, CD/1364, Appendix I, volume III, p 31. A footnote recorded that a number of delegations opposed any inclusion in the CTBT of a section on "so-called 'peaceful nuclear explosions'".

¹¹⁰ Ahmad Kamal, June 9, 1994, CD/PV.681. Pakistan's position on this indicated that denying India a loophole was more important than supporting China's preference.

¹¹¹ Debate in WG.2 of the NTB Committee, Conference on Disarmament, March 9, 1995; and China, Working Paper, *Proposed Wording for the CTBT Article on "Relation to Other International Agreements"*, CD/NTB/WP.240, June 12, 1995.

¹¹² *Report of Main Committee III*, in 1995 Review and Extension Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, Final Document Part II, Documents Issued at the Conference, New York, 1995, NPT/CONF.1995/MC.III/I, p 385.

¹¹³ Islamic Republic of Iran, *Draft Comprehensive Test Ban Treaty*, February 21, 1996, CD/1384.

¹¹⁴ This information, which I referred to in published reports during the CTBT negotiations, was subsequently confirmed in conversations with Russian and Chinese officials and by being quoted in a report by Senior Colonel Zou Yunhua, a member of the Chinese delegation during the CTBT negotiations. See Zou, 1998, p 11.

¹¹⁵ Conversation with a senior Russian diplomat, Vienna, July 2001.

¹¹⁶ Conversations with a senior German diplomat reflecting his colleagues' opinions, Geneva, February 1996.

¹¹⁷ Acronym may have contributed to the international NGOs' lack of involvement on the issue, as my early reports tended to reinforce the corridor assumptions that China's bargaining strategy would entail "sacrificing" PNEs (as indeed it had sacrificed its proposals for no first use and security assurances) to gain a more important benefit when the time came.

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- ¹¹⁸ Conversations with two Iranian diplomats, Geneva, February 1996.
- ¹¹⁹ Rebecca Johnson, "CTB Negotiations - Geneva Update No 26", *Disarmament Diplomacy* 2, (February 1996) p 12.
- ¹²⁰ Sergio Gonzalez Galvez, Deputy Secretary for Foreign Affairs of Mexico, March 21, 1996, CD/PV.731.
- ¹²¹ See note 115.
- ¹²² Sha Zukang, March 28, 1996, CD/PV.733.
- ¹²³ At the same time, China was seeking leverage with the United States over on-site inspections, which the US delegation had declared its priority in the endgame.
- ¹²⁴ Sha Zukang, June 6, 1996, CD/PV.737.
- ¹²⁵ China, *Article 2, Peaceful Nuclear Explosions*, June 18, 1996. Informal proposals like this, the Canadian counter-proposal and the compromise text, as noted below, were not assigned a CD number.
- ¹²⁶ Two years later, a senior Chinese negotiator confirmed to me in an off-the-record conversation, that it was important for China that the phrase "nuclear explosions for peaceful purposes" was mentioned as an issue which could be raised in the future.
- ¹²⁷ Mark Moher, Canada's ambassador to the CD at the time, frequently used this term in describing Canada's position on PNE.
- ¹²⁸ Canada, *Suggested Changes to Article VIII*, June 26, 1996.
- ¹²⁹ *Compromise text*, June 26, 1996. Reproduced in Article VIII, Review of the Treaty, Comprehensive Nuclear Test Ban Treaty. See Appendix.
- ¹³⁰ Australia, Working Paper, *Draft Article on Scope*, March 9, 1995, CD/NTB/WP.222.
- ¹³¹ This perception is borne out in Yuan, 1999, pp 85-128; Zou, 1998; and, by implication, by Dingli Shen, "China", in Arnett, 1996, pp 24-30.
- ¹³² Graham confirms that "as a result of this experience, the French really got religion. They closed their test site, they supported zero yield CTBT, and they became one of the strongest supporters of [the] CTBT, having been one of the most recalcitrant." Graham, 2002, p 248.
- ¹³³ John Holum, Director of the US Arms Control and Disarmament Agency, January 23, 1996, CD/PV.721.
- ¹³⁴ For contrasting views on nuclear weapon development under a low yield and zero yield ban, see R. E. Kidder, *Maintaining the US Stockpile of Nuclear Weapons During a Low-Threshold or Comprehensive Test Ban*, (Livermore, CA: Lawrence Livermore National Laboratory, October 1987, DE88 002478, declassified); Sidney Drell et al, *Science Based Stockpile Stewardship* (McLean VA: JASON/The MITRE Corporation, November 1994, JSR-94-345); Christopher E. Paine and Matthew G. McKinzie, *End Run: The US Government's Plan for Designing Nuclear Weapons and Simulating Nuclear Explosions under the Comprehensive Test Ban Treaty* (Washington DC: Natural Resources Defense Council, August 1997); Andrew Lichterman and Jacqueline Cabasso, *Faustian Bargain 2000: why 'stockpile stewardship' is fundamentally incompatible with the process of nuclear disarmament* (Oakland CA: Western States Legal Foundation, May 2000); and Robert Civiak, *Maintaining the Nuclear Weapons Stockpile: A Comparison of Five Strategies* (Livermore CA: Tri-Valley CAREs, April 2000).

Chapter Seven

Verification: Detection, Deterrence and Bearability

With the aim of encouraging US ratification of the CTBT in 1999, where cold war rhetoric questioning the treaty's verifiability had been revived by test ban opponents, the heads of state of its three major European allies issued a public appeal: *"the United States and its allies have worked side by side for a Comprehensive Test Ban Treaty since the days of President Dwight D. Eisenhower. This goal is now within our grasp. Our security is involved, as well as America's... The treaty is effectively verifiable...the [monitoring] system is already being put in place. We know it will work."*¹

Negotiating the verification for arms control and disarmament treaties had proved a difficult and divisive challenge during the cold war, but as this chapter shows, it was much less contentious during the post cold war CWC and CTB negotiations. For this reason, the Clinton administration and international test ban advocates were surprised when criticisms of the verification system became a major plank of Republican opposition to CTB ratification by the United States.

In the cold war context of ideological conflict and mutual suspicion, verification had to take into account developments in advanced technology for observing and detecting clandestine military-related activities, as well as potential technologies and opportunities for circumventing an accord. Intersecting technical capabilities and political concerns, negotiations had to contend with deep rooted sensitivities around military intelligence, espionage and national security secrecy that frequently pitted domestic and opposing military and political interest groups against each other.

As discussed in Chapter 3, a comprehensive treaty banning nuclear testing in all environments was potentially achievable in 1958 and again in 1963², but an unrealistic burden placed on verification by test ban opponents in the United States played a major role in preventing an agreement that included underground testing. At the forefront of those who elevated verification objectives to impossible heights were some of the key scientists in the nuclear laboratories who had a direct interest in

maintaining the research resources and intellectual drive and stimulus associated with nuclear weapons testing. Though the American negotiators fostered the concept of verification as neutral and objective, some influential scientists took advantage of the technical limitations of many officials and politicians in the US government (and the insecurity and awe that many non-scientists feel around technical experts) to promote demands for stringent and intrusive provisions for monitoring stations and on-site inspections. Soviet negotiators, provided with counter information from their own scientists, dismissed the technical premises on which the more far-reaching US verification positions were based, a position shared by some of the American scientists.³ Suspicious of American motives, the Soviets rejected the neutral, objective image of '*proverka*' (verification) with which the US negotiators promoted their demands. Instead, US demands for intrusive verification were depicted as '*kontrol*' (oversight), a mechanism viewed as being not for confidence building so much as for collecting intelligence on sensitive Soviet military and industrial sites.⁴

In view of the US-Soviet dominance of cold war politics, it is unsurprising that much of the literature on verification drew its conclusions from analysing bilateral arms control. Throughout the cold war, arms control and verification were subject to the mutual fears, suspicions and exaggerations that characterised US-Soviet relations.⁵ Sir Michael Wright, a PTBT negotiator on behalf of Britain with a close-up view of the US and Soviet postures, summed up the fundamental division in attitude to verification as: "what the West considered adequate, the Communist countries rejected as unbearable; what the Communist countries considered bearable, the West regarded as inadequate".⁶ Put another way, the Americans assumed the Soviets would try to cheat and so pushed for the fullest possible range of verification provisions, while the Soviets assumed the Americans would spy, and so resisted mechanisms or technologies that might compromise their security.

The 'adequate versus bearable' dilemma hinged particularly on the more intrusive components of verification, drawing much of its power from the deep ideological divisions between the major cold war protagonists. Verification was not the neutral objective instrument of confidence-building that the United States sought to portray, but subject to domestic political manipulation. At times, for example, it was employed as a propaganda tool to contrast the US 'open society' with the 'closed'

Communist regime; the United States cast itself as pro-verification (signifying pro-honesty) and the Soviet Union as obstructive (signifying deceit). In addition to the noted example of the nuclear weapon laboratories distorting technical requirements and swaying US negotiating positions prior to the PTBT, the US intelligence agencies traditionally carry considerable weight, forming a powerful interest group in a partisan political environment where treaties require a two-thirds majority in the Senate.⁷

The CTBT is the first nuclear arms control treaty where attempts have been made to develop a multilateral monitoring regime, with stations and sensors based in many countries around the world. By contrast, conflicts over national technical means and OSI have been a familiar, politically-charged characteristic of bilateral nuclear negotiations in the cold war.⁸ The influential verification question posed by Allan Krass in the 1980s – “how much is enough”⁹ – resurfaced in the multilateral context of the CTBT negotiations in the 1990s, but with notable differences in the protagonists and dynamics. As a consequence of the changes in Russian attitudes to verification, initiated under Gorbachev, post cold war Russia was no longer America’s main ideological combatant on verification. However, during the 1990s, US-Chinese debates over CTBT verification, especially national technical means and on-site inspections, came to sound remarkably similar to the earlier US-Soviet debates. Other delegations, notably India, Pakistan, Iran and Israel, echoed similar concerns, wanting to protect their sensitive sites from scrutiny by neighbours or adversaries. Though the priority of most negotiators was to ensure that the verification system would deter and detect cheating, the CTBT case shows that for some participants, preventing the verification provisions being utilised as a cover for espionage or inappropriate intelligence gathering was an equal if not higher priority.

After long and intensive negotiations that brought the military and national security interests of some of the P-5 and D-3 into confrontation with the United States, the middle powers helped to bridge the differences and broker compromises. The result was a verification regime comprising four basic elements: an international monitoring system; consultation and clarification; on-site inspections; and confidence-building measures. Chapter 7 looks in detail at the negotiating history and dynamics for the two principal components of the CTBT verification regime: the international

monitoring system and on-site inspections, including the role of national technical means. These issues were chosen for study because they most clearly reveal the dilemmas and dynamics of negotiating multilaterally on cooperative and adversarial verification approaches. My intention is to look at the different ways in which convergence was reached, drawing out the factors by which the IMS negotiations differed from OSI and NTM. What role can be ascribed to Krasner's five factors – political power, self interest, knowledge, usage and custom, and diffuse norms and principles – and how did these affect the way the adequate/bearable dilemma played out in this example of post cold war multilateralism, especially in relation to the nuclear weapon status and interests of the various members of the P-5 and D-3?

Conceptualising CTBT Verification

Nuclear testing produces four kinds of primary effects: blast, heat, initial and residual nuclear radiation. These phenomena result in different short, medium and long-range effects able to be detected by a range of different technologies and techniques. Although the PTBT already prohibited nuclear testing in the atmosphere, outer space and underwater, the Nuclear Test Ban Committee decided early on that the verification regime for the CTBT should be capable of detecting and identifying nuclear explosions in these environments as well as underground. Agreement soon emerged that the verification system would need to encompass the following: an international monitoring system incorporating a set of mutually complementary technologies enabling the prompt detection of events, providing treaty parties with source detection, identification, location and attribution capabilities; the exchange, interpretation and analysis of data; the ability to distinguish false alarms¹⁰; the role, scope and provisions for OSI; the political requirement for a multilateral and nondiscriminatory regime and whether to incorporate information derived from national technical means; cost and cost effectiveness; universality and regional concerns; and, finally, the time required for systems to become operational.¹¹

Three years before the CTBT negotiations opened, Ola Dahlman, the Swedish Chair of the Group of Scientific Experts to Consider International Co-operative Measures to Detect and Identify Seismic Events (GSE)¹², who played an important role in the development of the seismic network for the IMS, identified verification's basic

purposes as: “to provide confidence that other parties to the treaty are obeying their obligations, and to deter parties from clandestine activities violating the treaty”. To fulfil this purpose, the verification system “must provide a high capability for the detection and identification of clandestine activities... [and must] limit the risk of creating false alarms by misinterpreting naturally occurring events as clandestine activities”.¹³ Dahlman’s practitioner’s definition was consistent with Allan Krass’s classical definition of verification as “the action of demonstrating compliance with treaty obligations by means of evidence or information gathered by a variety of technical and institutional means”.¹⁴ But these basic definitions glossed over issues of great sensitivity and importance to the countries with capabilities that might come under scrutiny.

Addressing the modern version of the adequate/bearable dilemma, arising from the dual-use capabilities of some technologies and techniques of verification, Krass sought to distinguish between verification, intelligence and espionage thus: “intelligence can be seen as an umbrella term covering the full spectrum of information-gathering activities, verification can be seen as those legal and proper intelligence activities which are carried out for the explicit purpose of demonstrating compliance with existing treaties and agreements, while espionage can be seen as those intelligence activities which are illegal or improper under generally accepted rules of international conduct”.¹⁵ Definitions notwithstanding, the problems for CTBT negotiators arose over how to apply the distinctions (and the fact that they were mediated through different worldviews about nonproliferation, disarmament, transparency and confidence) to the practical design of the CTBT verification system in ways that would reassure governments concerned not to legitimise espionage without risking the credibility of the treaty by allowing a major loophole for cheats.

Civil society had already played an important role in reintegrating verification into arms control and challenging the misuse of verification questions as rhetorical devices for obstructing or delaying arms control and disarmament agreements, as happened too frequently (particularly in the United States) from the late 1950s through the 1970s. Epistemic actors and norm entrepreneurs played a leadership role in verification projects such as the NRDC-SAS joint experiments, helping to identify the verification approaches, technologies and techniques that a CTBT might require.¹⁶

In a study prepared as a resource for the delegates to the PTBT Amendment Conference, VERTIC in 1990 identified three main functions of a CTBT verification regime: i) to establish a “verification gauntlet” to detect significant cheating; ii) to deter cheating by rendering a potential violator sufficiently unsure of escaping detection; and iii) to build confidence in the treaty so that the security of all parties is enhanced and there is an incentive for others to join in.¹⁷ In essence, these VERTIC criteria reflected the verification principles developed by the Reagan Administration for the INF Treaty of 1987, the first breakthrough in arms limitation for more than a decade. Reagan’s dictum “trust but verify” was open to competing interpretations, however. Did it signify a more constructive approach to cooperative arms control as the cold war ended, giving hope that verification might take its rightful place as a confidence-building tool to reinforce arms control compliance? Or did it confirm the prejudices of those who raised unobtainable and unnecessary verification demands so that the other party could be blamed for failing to compromise sufficiently for arms control to be achievable?

Some US nongovernmental analysts sought to engage traditional opponents of arms control by highlighting the role that verification could play in increasing the financial and political costs of clandestinely producing or testing weapons in violation of treaty commitments. Backing agreed constraints with monitoring and inspection provisions can significantly diminish operational and military confidence in weapons developments carried out under clandestine conditions and will substantially increase the technical risks and economic and political costs to a cheating government.¹⁸ Sceptics tend to point to the discovery of Iraq’s extensive nuclear weapon programme in 1991 as evidence that the safeguards-based verification under the NPT, of which Iraq is a party, had failed. Verification proponents draw a different lesson. Undoubtedly, the IAEA inspections of declared facilities had failed to detect Iraq’s clandestine production at hidden, undeclared sites, a recognition of inadequacy that led to the overhaul of the IAEA’s inspection mandates through Programme 93+2¹⁹ and the negotiation of more far-reaching safeguards protocols for NPT parties to adopt. Yet inadequate though the IAEA’s safeguards may have been, Saddam Hussein’s attempt to evade detection necessitated a much more expensive and technically difficult programme than if Iraq’s nuclear weapons development had been able to be open and not clandestine.²⁰

This example illustrates the philosophical clash between those who perceive verification as primarily a confidence-building measure and deterrent against cheating, and those who prioritise the highest levels of detection and proof covering all imaginable violation scenarios. The two purposes are related, as the detection, location and identification capabilities must be sufficiently credible if the verification system is to function as an effective deterrent, but the different approaches have implications for negotiating posture. Neoliberals will tend to be deterrent verificationists and favour a more pragmatic approach designed to instil confidence in the system rather than guarantee a hundred percent protection against violation; realists, on the other hand, are more likely to be detection verificationists and to demand high levels of coverage for conceptually imaginable violation scenarios however remote they might be in practical terms.²¹

By the time the CTBT negotiations in Geneva commenced in January 1994, verifying a nuclear test ban had been the subject of competing ideologies, demands and expectations, not only between the nuclear weapon states, but among interest groups and departments within some of the key governments as well. Recognising this, the first Chair of Working Group 1 on Verification, Germany's ambassador, Wolfgang Hoffmann, sought to bring the competing approaches into the open from the start and enable the political and technical assumptions to be unpacked and disaggregated. In his first working paper, Hoffmann posed four fundamental questions:

- 1) What are the main objectives of the verification of the treaty's basic obligations?
- 2) What would be the components of such a verification system? Aside from seismic monitoring and on-site inspection, should the treaty envisage other measures such as radionuclide and hydroacoustic monitoring?
- 3) What do we mean by a "cost effective" verification? What could one reasonably expect to verify and how much would it cost?
- 4) If one opts for an "evolutionary approach", should the treaty itself provide for a mechanism (and resources) to develop and evaluate other monitoring techniques?²²

As responses to these questions came in, the differing priorities could be more clearly be assessed. The evolutionary approach referred to by Hoffmann was advocated by Russia, and came to be widely supported among the nonaligned states. In contrast to some of the proposals from the United States and also China, which advocated the inclusion of satellites in the IMS, Russia wanted the verification system to begin with a pragmatic baseline, allowing for the gradual inclusion of “new methods and technical means that would increase the reliability and quality of the CTBT compliance verification”.²³ The evolutionary concept was immediately opposed by the United States, France and Britain, who portrayed it as tantamount to agreeing to open-ended verification. To understand how these differences were resolved, the following section considers the development of the IMS in detail.

The International Monitoring System

Of all the different parts of the CTBT negotiations, developing the IMS was the most genuinely multilateral. There were three major – and related – reasons for this: effective management and continuity of coordination; the direct, accountable engagement of scientists and technical experts on a number of NNWS delegations as well as from the nuclear weapon states; and conscious attempts to disaggregate issues and depoliticise disagreements. Although there was an inevitable dominance by those with greater technological expertise and command, they did not always get their own way.

The principal coordinator throughout the IMS negotiations was Peter Marshall, a British MoD scientist with long experience in monitoring technologies, who had participated in the tripartite testing talks as part of the British delegation in 1977-80. In addition to those earlier negotiations, Marshall had considerable multilateral experience, having been a member of the GSE since its inception in 1976. This gave him the advantage of being well known and already respected among many of the scientists from other delegations. In 1994, he was appointed Friend of the Chair on Non-Seismic Verification, with Ajit Kumar of India providing diplomatic oversight of the seismic component of the IMS, working closely with Dahlman and the GSE. In 1995, Patrick Cole of Australia was appointed Friend of the Chair for the IMS, tasked with negotiating treaty language on the technical options being worked out among the scientists. Marshall, made responsible for Technical Verification, carried on with his

work to develop the IMS, while Ralph Alewine (United States) was appointed to coordinate negotiations on the International Data Centre. These three worked exceptionally well together and were reappointed to the same positions in 1996 in order to finalise agreement on the architecture of the IMS and its appropriate representation in treaty text.

A major problem for bilateral arms control negotiations in the past has been the perceptual dissonance among Soviet and American policy-makers about the relationship between the technical and political components of verification. Portraying their verification positions as arising from a neutral, technical quest to find the best, objective means to ascertain compliance or non-compliance with a given agreement, the United States has appeared to regard any opposition to its verification demands as having an ulterior political motive, i.e. to weaken the US ability to deter potential or planned cheating. By contrast, Soviet policy-makers viewed verification as inherently political, the perception of data and technical arguments depending on policy objectives and negotiating strategies.²⁴

In the negotiations on the IMS, there continued to be a strong US disposition towards presenting its proposals as if based on neutral technical data and therefore non-negotiable. But possibilities for polarisation were undercut by the fact that the criticism of US positions in the CTBT was as likely to come from its Western allies as from opposing weapons states or G-21 members. The multilateral dynamic in the IMS negotiations therefore curtailed the American capacity to dismiss arguments against its IMS positions as emanating from ideological incompatibility or the malign purpose of seeking ways to cheat. In addition, Marshall worked hard to demystify concepts, unpack complex issues, and represent technical and financial options in ways that built confidence among some of the less technically well resourced delegations. By deliberately highlighting the policy implications of different technical options that the working group put forward, his strategy (paradoxically, some might think) helped to depoliticise the disagreements.

Though there were many differences of view regarding the number, distribution and location of sensors, there were only three major disputes, each of which pitted one of the NWS against the majority of participants in the negotiations. The most difficult

dispute to resolve concerned China's insistence (supported by Pakistan) that the IMS must include satellites and electromagnetic pulse (EMP) monitoring, and that it should omit the infrasound network. The second problem concerned the analysis of data by the international data centre. The United States, the only country to have direct experience running a prototype IDC (in Virginia), argued that the massive amount of complex data from the IMS should only be processed, to produce a bulletin of detected events, and then disseminated and archived, leaving all interpretation in the hands of individual states parties. Fearing that the majority, lacking adequate resources to analyse such data, would be disenfranchised, the G-21 pushed for the IDC to provide more 'user friendly' reports, with some analysis and at least preliminary identification of any events that could be clearly identified as of natural origin. Russia sparked a further, short-lived but politically problematic dispute over additional test site monitoring, suddenly putting in a late demand for extra seismic and radionuclide stations to be placed at the four operational test sites.

In the first year, the competing claims of seven technologies were discussed in the verification working group: seismic, radionuclide, hydroacoustic, infrasound, ground-based optical, ground-based EMP detection, and satellites.²⁵ Under Marshall's direction, the experts developed six options for consideration, looking at detection capabilities for explosions of three standard yields. Four options were offered for the anticipated baseline of 1 kt, a practical standard for detecting nuclear explosions equivalent to 1000 tonnes of TNT or more. Minimalist and maximalist options were also provided for a larger potential baseline of 5 kt (involving around 25 primary seismic stations with three other IMS technologies) and for a much lower baseline of 100 tonnes, which would have required much more extensive monitoring based on 150 primary seismic stations and increased coverage from a range of other IMS technologies.

There was some anxiety among non-nuclear countries that this baseline was conveniently higher than the threshold negotiations being conducted among the P-5. When 1 kt was formally accepted as the baseline criterion, Marshall sought to address this concern, emphasising that the baseline was a practical measure for designing a cost effective system and must not be confused with a threshold.²⁶ The baseline determination reflected two kinds of assessment: the need to keep costs down; and the

scientists' confidence that the synergistic relationship between different IMS technologies would ensure that nuclear explosive testing at much lower levels would in practice be detected. The uncertainty factor was expected to provide a high deterrent value down to very small yields.²⁷

The Seismic Signature

The core of the IMS is the seismic network. An underground explosion generates seismic waves which can be detected by special sensors, data from which can be used to locate and identify the origin of the waves. As nuclear explosions have a characteristic signature, seismic stations can also distinguish between earthquakes and explosions. Much work had already been done on seismic verification, principally through the work of the GSE, established at the insistence of a group of non-nuclear and nonaligned countries in 1976, in part to counteract test ban opponents' portrayal of the CTBT as unverifiable.

As negotiations got underway in the verification working group, there was much concession-trading around the number and location of primary and secondary seismic stations that would be needed to provide cost effective verification confidence. Some countries were concerned about the expense and inconvenience of having stations on national territory, while others were keen to host a station, perceiving it as an opportunity for closer participation in international projects or research. Some were wary of stations being sited close to sensitive facilities. With Marshall's careful management, the majority of such concerns were able to be resolved by a process of trade-offs, negotiation and reassurance. In January 1996, however, after the IMS was thought to be substantially finalised, Russia caused astonishment with a late proposal calling for four additional seismic and radionuclide stations, one each to be located at the test sites at Nevada, Lop Nor, Novaya Zemlya and Moruroa. Explaining the late demand, Berdennikov argued for "identical transparency", claiming that Novaya Zemlya was more closely monitored than Nevada.²⁸ Russian diplomats went further, indicating that the zero yield decision altered the government's view of IMS requirements.²⁹

Russia's demand was a petulant reaction to being steamrolled into the zero yield scope and was targeted at the United States, but China objected most vociferously. In

an oblique reference to mutual support between the Russian and Chinese delegations over issues such as PNE and OSI, China criticised the new proposal as presenting “only Russian views” and said it gave the impression that only the NWS might be suspected of violating the treaty. China objected that Lop Nor was more closely monitored than the global average in any case and rejected any further enhancement of the detection level as excessive and unacceptable.³⁰ Ignoring the fact that the P-5 are more capable of conducting (and concealing) nuclear tests than the global average, China based its objection on the principle that the verification system must be equal and nondiscriminatory. The Russian demand combined with Chinese hostility to increased monitoring at Lop Nor threatened the IMS negotiations with a verification deadlock. The United States took the lead in bridge-building to resolve the conflict, initiating hurried negotiations among the P-5, and then negotiating bilaterally first with Russia, to whom it offered bilateral confidence-building measures, and then China. In the end it was agreed that the location of one seismic station would be changed from California to Nevada, closer to the US test site, and that the station earmarked for Kazakhstan would be updated to a more sophisticated array and moved closer to the border with China’s Xinjiang province, thereby bringing it closer to Lop Nor without requiring explicit Chinese agreement.³¹ The incident took the CD by surprise because it was a regression to the days when arguments about verification masked other political, ideological or power struggles.

Detecting Airborne Radioactivity

The second network to be incorporated into the IMS was designed to measure the radionuclides emitted from a nuclear explosion in the form of dispersed particulates and gases. These emissions can be distinguished from similar fission products released by nuclear power plant operations or accidents. Though there was general agreement that radionuclide sampling would be necessary to detect atmospheric tests or venting from underground or underwater explosions, there were two areas of contention: whether it was necessary to measure for the emission of chemically inert, ‘noble’ gases such as argon-37, with a half life of 35 days, xenon-133, with a half life of 5 days, and the more long-lived isotope, krypton-85, with a half life of 10.7 years; and whether specially equipped aircraft could play a useful role. Experts from two delegations were charged with the task of analysing how the radionuclides would respond to geographical and meteorological conditions, such as wind transportation.

Aiming for 90 percent detection probability of a 1 kt explosion within 14 days, the experts recommended a radionuclide network comprising some 70-80 stations and from five to ten radionuclide laboratories around the world.³²

On the grounds that noble gases from nuclear explosions are known to leak from underground explosions,³³ eventually all but one delegation in the 'Radionuclide Expert Group' agreed that noble gas monitoring should be included in the IMS. They reasoned that noble gases could play a uniquely valuable role in early detection and identification (within ten days) of an explosion in several potential environments, contributing especially to early resolution of ambiguous events, which would be politically desirable. Noble gas monitoring would also assist in detecting a decoupled explosion and increase the costs and risks to a potential violator, thereby maximising the deterrent function of the verification regime. China's experts disagreed. They argued that the effectiveness of noble gas monitoring was difficult to judge but would significantly increase the overall costs of the IMS. In Beijing's view noble gas monitoring would only contribute to the detection of underground or underwater testing if sensors were located very close to the site. China was willing to include testing for noble gas emissions as part of an OSI, but noted that time-critical phenomena, such as xenon gas, would disappear after two weeks.³⁴ Appearing to endorse the concept of evolutionary verification, on which it had remained hitherto silent, China argued that the question of adding a noble gas monitoring capability should be deferred; if more technical study showed that inclusion was warranted, noble gas monitoring could be added to the IMS at a later stage.³⁵ During the final concession-trading of the endgame, China accepted Ramaker's draft incorporating noble gas sensors co-located with 40 of the 80 radionuclide stations.

A second disagreement arose because Russia wanted fewer ground-based radionuclide sensors than were being considered in Marshall's options. Instead, Russia proposed equipping three special aircraft which could be quickly scrambled to over fly a suspicious location or event, with sensors to detect particulates and noble gases. Russia's position was that a CTBT violation was likely to be very rare, and that maintaining a full radionuclide monitoring network in perpetuity would be very expensive. They considered it more cost efficient to have the commitment to deploy appropriately equipped aircraft immediately after a suspicious event was detected by

other technologies. Russia argued that this could be accomplished rapidly and would enable samples to be taken in various atmospheric layers.³⁶ Others, however, worried about the timing and terms (ownership, responsibility for equipping, personnel training, piloting etc.) that would govern the deployment of the aircraft. In the end, this issue was resolved through US-brokered concession-trading in conjunction with the P-5 negotiations on Russia's proposal for identical transparency at the test sites. In return for two seismic stations being moved a little closer to the US and Chinese test sites, Russia abandoned the proposal for aircraft and agreed to the network of monitors outlined in Ramaker's draft treaty text.

'Hearing' Underwater Explosions

From the beginning there was agreement that there should be a hydroacoustic network for detecting explosions conducted underwater or underground in marine environments, such as the French test sites at Moruroa and Fangataufa in the Pacific. Such explosions generate a wave in the low sound velocity layer in the oceans known as the SOFAR (sound and far range) channel,³⁷ which can be detected by hydroacoustic sensors thousands of kilometres from their source. Negotiations therefore focused on the number and location of hydroacoustic stations, to maximise cost effectiveness. Initially there was enthusiasm for establishing 16 stations: four each to cover the Atlantic, Indian, and Pacific Oceans, plus a station south of Africa to cover both the Indian and Atlantic Oceans, and three additional hydroacoustic stations to aid location identification and to cover in the event of failure of one of the primary stations. Because of the very high expense, this system was modified down by agreement to six fixed cable hydrophone stations and five T-phase stations near coasts or on islands.³⁸

Sensing Nuclear Shockwaves

A further technology, infrasound, was advocated by the majority of delegations to provide enhanced detection and location capabilities for nuclear explosions conducted in the atmosphere. Consisting of either microphones or microbarographs, organised for maximum effectiveness in arrays of three or more sensors, infrasound sensors detect the shockwaves produced by nuclear explosions once they have decayed into a sound wave. Apart from China and Pakistan, who argued that satellites and EMP would be more effective and would obviate the necessity for infrasound coverage,

there was an early majority for including an infrasound network of around 60 sensors in the IMS. When Beijing finally accepted that satellites and EMP monitoring would not be included in the IMS, China and Pakistan also withdrew their objections to incorporating an infrasound network into the treaty.

Leaving out Satellites and EMP

China's proposal for the IMS to include a network of satellites and electromagnetic pulse monitors proved very controversial. China's position was that EMP and satellites were necessary to detect and identify nuclear explosions conducted in the upper atmosphere or space and to monitor potential sites on the ground. Most other delegations regarded a CTBT-specific satellite system as prohibitively expensive.³⁹ Additionally, China proposed that a network of around 60 EMP sensors could be established at relatively low cost and would provide "high sensitivity, precise location and prompt response" for detecting nuclear explosions conducted in the upper atmosphere.⁴⁰ By contrast with its position on satellites, which was shared only by Pakistan, there was wider interest in China's assertions that a ground-based EMP system would enhance the location and identification capability for atmospheric and high altitude tests. Concerns were raised about a high false alarm rate due to lightning, however. China proposed that the analytical software could be designed to discriminate between lightning EMP and nuclear EMP, but other experts were sceptical that this would be possible, and in the end, EMP monitoring was left out.⁴¹

Interpreting IMS Data

The International Data Centre, modelled on the US experimental IDC in Virginia, was intended to process thousands of pages of computerised data from the stations and networks in the IMS. Among the many details that needed to be resolved, the question of IDC "products" – in effect, how often and in what form the IDC data should be transmitted to states parties – became a focus for sharp disagreement in late 1995 and early 1996. Although carried out in the language of technical parameters for filtering and analysing data, the underlying issue was primarily one of participation, finance and cost effectiveness. Although some G-21 members would have preferred the IDC to tell them if there was a violation, there was no serious or lasting dispute over the majority view that it was the responsibility of states parties and not the IDC or technical secretariat to assess compliance, as this required the exercise of political

judgement. In contention was what form of information, reports or bulletins the IDC should send out to enable states parties to exercise this judgment role according to the treaty's purpose and requirements. In this, as in nothing else, the US approach was minimalist.

Though it was indisputable that the raw data would be unmanageable for most states parties, the United States took the view that the IDC should only process, compact and disseminate the data; anything more would usurp the responsibility of states parties to assess compliance. But only a very few states have the technology to come near to the US capacity to analyse the data in a timely, regular and effective manner. The American position provoked widespread hostility from most NNWS. They considered it absurd to base a standard on US technological supremacy, as this would effectively exclude the majority from decisionmaking.⁴² Resolution of the issue was complicated by the fact that the Friend of the Chair on the IDC for most of 1995 and 1996 was a member of the US delegation, Ralph Alewine. In February 1996, Alewine put out a working paper with three options, presenting the one closest to the US position as the cheapest for the CTBTO to provide. Other negotiators, however, pointed out that for states parties wishing to participate fully in decisionmaking, this option would actually be the most expensive on an individual basis.⁴³ As a US government employee, Alewine was in a difficult position. While sympathising with his dilemmas, some negotiators felt that he had skewed presentation of the options towards the US policy position. As the debate developed, Germany was the first Western ally to take a public stand against the US position. Commenting that all the options put forward by Alewine were simply different degrees of technical evaluation and screening of data, Germany advocated making use of IDC expertise to provide substantial filtering for the data. This would be more cost effective in the long run and would ensure greater participation by states with limited technical capabilities of their own.⁴⁴ With Germany's formidable technical experts weighing in on the side of the non-aligned, the US position began to weaken. After considerable consultation and discussion during the final year, Ramaker decided that the IDC would screen data in accordance with internationally standardised criteria established by the CTBTO, filter it according to nationally requested criteria, and provide some additional technical assistance to states parties. This "enhanced option 2" was accepted by the United States and others in May 1996.

With conclusion of the provisions for the IDC, the IMS was finally agreed. It was to comprise 50 primary seismic stations and 120 auxiliary seismic stations; 80 radionuclide stations for monitoring particulates in the atmosphere, of which 40 would ultimately be capable of monitoring noble gases; 11 hydroacoustic stations, and 60 infrasound monitors.⁴⁵

One final note must be added here. Having participated fully in the IMS negotiations, even acting as a Friend of the Chair in the first year, India withdrew its participation in the IMS during the very last stage of negotiations. This had nothing to do with its position on the IMS *per se*, but was in reaction to the entry into force formula inserted into the Chair's first draft treaty.⁴⁶ Thus, the exemplary multilateral negotiations on the IMS fell victim to India's retaliation against what it perceived as coercion over entry into force, an outcome that highlighted the British delegation's postural contradictions.

On-Site Inspections

From the multilateralism of the IMS negotiations, we turn now to consider how the negotiations achieved convergence on the issues of inspections and national technical means, recurring sources of conflict in arms control negotiations. Negotiations about on-site inspections – the direct, physical examination of a suspected site or facility – and the related question of whether and how data from national technical means would be incorporated, laid bare governments' concerns about national security, equality and discrimination under international law. It pitted anxieties about spying against the verification requirement of timely access to evidence. As this section shows, the principles of sovereignty and nondiscrimination, evoked primarily by China, the weakest of the NWS, and the D-3, were juxtaposed against the US's unilateralist desire to watch, know and have the option to control other states that might impinge on its own national security.

Though deliberations on OSI started at the same time as other issues, with a Russian Friend of the Chair in 1994, actual negotiations did not get underway until the final year. The first two years generated many questionnaires and working papers to define

the parameters and issues relating to OSI, but there was little real political attention. This was in part because of the impossibility of determining the level of intrusiveness that would be required until the scope and basic obligations had been substantially agreed. Such slowness in getting to grips with the challenges was due not only to the sensitivity of OSI for domestic military, national security and intelligence interests, but also to some states parties' attempts to renegotiate the precedents on inspections set by the Chemical Weapons Convention, which the CD concluded just before embarking on the CTBT.

In the CWC, there had been little controversy over NTM, but OSI was central, with the main protagonists switching positions, partners and priorities over the adequacy and bearability of levels of access and intrusion.⁴⁷ In the wake of post-Gulf War revelations in 1991, showing how Iraq had evaded the IAEA safeguards inspections, many states wanted the Organisation for the Prohibition of Chemical Weapons (OPCW) to have wide powers of inspection, including the right to conduct short-notice inspections at undeclared as well as declared sites. Having accepted the principle of intrusive OSI in the INF Treaty, President Gorbachev in 1988 indicated his willingness to accept the US demand for “anytime, anywhere” inspections in the CWC.⁴⁸ The Soviet acceptance of the US position threw Washington into confusion, leading to interagency reviews, with muddled and contradictory statements, and an eventual reversal of US policy on OSI. During the difficult negotiations that ensued, the United States was opposed by most of its allies, but found odd bedfellows as China, Pakistan, India and Iran gave guarded approval to the less-intrusive inspections put forward in the US-led “gang of one plus three” proposals of July 1991.⁴⁹ In the end, Australia and Britain brokered a compromise which was accepted by the United States and, in effect, imposed on the rest. Described by one enthusiastic observer as its “crowning glory”, the CWC concluded with mandatory, short-notice “challenge” inspections with procedures for “managed access” to protect sensitive information or sites not related to the CWC.⁵⁰

After the confusions of the CWC, when the United States and Russia switched positions and Washington lost credibility by retreating from the wide-access provisions it had laid down in the 1980s, it was not Russia, but China, which took the United States up to the wire on OSI provisions for the CTBT, managing to force a

last-minute change to the Chair's draft text. With important domestic constituencies to satisfy, the national interests of both countries took precedence over regime considerations, showing once again that for states with nuclear weapons programmes or ambitions, the question of intrusive inspections can make or break arms control negotiations.

Background

During the first phase of negotiations for a test ban in the 1950s, the Report of the Conference of Experts to Study the Methods of Detecting Violation of a Possible Agreement on the Suspension of Nuclear Tests concluded as follows: "When the control posts detect an event which cannot be identified by the international control organ and which could be suspected of being a nuclear explosion, the international control organ can send an inspection group to the site of this event in order to determine whether a nuclear explosion had taken place or not."⁵¹ Theoretically sound, perhaps, but it soon became clear that the Soviet delegation and the US-UK delegations differed in their interpretation of the Conference of Experts' recommendations. Britain and the United States wanted inspections to be launched "at any time" that the seismic data were deemed to be inconclusive. Moscow considered that ambiguous events should first be the subject of consultations between the treaty parties, and that inspections should only take place if agreed to by the party on whose territory the unidentified event had occurred.⁵² In the end, unable to agree on control posts and inspections, the three nuclear powers settled on the PTBT, deciding that remote monitoring by technical means would be sufficient to oversee a prohibition on nuclear explosions in the atmosphere, outer space, and underwater, without the intrusiveness that a ban on underground testing would require.⁵³

Subsequently, and for much of the 1960s–1980s, disagreements over the requirement and modalities of OSI pitted Soviet and American negotiators against each other. The Reagan administration raised the standard verification requirement from "adequate" to "effective", and for many American policymakers, effective verification meant on-site inspections; the terms were employed politically as if they were synonymous.⁵⁴ At the same time, OSI had become a potent tool of confrontation. The US government would call for intrusive inspections as a means of undercutting Soviet disarmament proposals, enabling Washington to take the political high ground and

put Moscow on the defensive, while garnering domestic and international support against the resulting ‘intransigent’ Soviet behaviour. Bureaucratic manoeuvring over OSI also became a tactic in Washington’s domestic arguments over arms control.⁵⁵ After the inability to agree on intrusive inspections ruined the chance of achieving a ban on underground tests with Eisenhower and Kennedy, little progress was made until the mid-1980s when, in a radical departure from previous Soviet policy, Gorbachev accepted intrusive inspections in order to secure the INF Treaty.⁵⁶

As already noted, OSI was hard fought in the CWC, and there was spillover from its conduct and outcome into the CTBT negotiations. As the following section details, the United States in the CTBT reverted to advocacy of stringent OSI requirements. China took the opposite extreme, fearing interference in its sovereign affairs and raising objections about espionage. The United States, Britain, and France emphasised the necessity for quick access and the prompt gathering of time-critical evidence, such as aftershocks and the venting of short-lived radioactive gases, although Britain and France were more prepared to compromise on questions of decisionmaking and access. Russia provided weak support to the Western positions, but favoured early provision for consultations and clarification, though with greater flexibility about its terms and timing. Along a continuum between the US and Chinese extremes, Russia was a little further from US positions than the two European NWS, especially regarding access to sensitive facilities, but not as distinctly opposed as its adversarial, pre-INF history on OSI might have suggested.⁵⁷ China, India, Pakistan and Israel argued that OSI should be a tool of last resort, used rarely, and only undertaken if a mandatory period of consultations failed to resolve a suspicious event or ambiguity. Israel, which for most of the negotiations had kept close to US positions, took a line much closer to that of China than the United States, principally because of its concerns about neighbours using the provision to gain access to sensitive facilities.

Intrusion -v- Protection: the Underlying Questions

The first two years of negotiations, 1994-95, focused on technical questions. In so doing, they brought out – but failed to address – the conflicting sensitivities that were to polarise the endgame. After its lack of coherence on OSI during the CWC negotiations, the United States now pushed for a stringent CTBT inspections

provision based on simplified decision-making and early access. As noted above, relations with Russia were less adversarial than in past negotiations, amounting to a form of collaboration on technical questions, in which both nuclear powers had much greater experience than most other participants. Having set the precedent in the INF Treaty and CWC of accepting a substantially more intrusive OSI regime than before, and with the major Soviet test site of Semipalatinsk already closed and under Kazakh administration, it was in Russia's interests to take a pragmatic approach.

In the first year of OSI negotiations, Victor Slipchenko, the Russian Friend of the Chair, appointed US delegation member John Zucca to head an expert group to consider the detectable characteristics, termed "manifestations or residual effects" of nuclear detonations and evasion scenarios in various environments. After much technical discussion, in which experts from the P-5 were most prominent, Zucca's list of what evidence might reveal a clandestine nuclear explosion looked remarkably similar to that developed by the Geneva Conference of Experts forty years earlier. Ruling out the possibility of conducting OSI in space and the upper atmosphere, the expert's report focused on testing in the lower atmosphere, underground and underwater environments, with particular emphasis on underground. Time critical manifestations identified included aftershocks; xenon gas⁵⁸; and human-generated artefacts, such as roads, debris or tailings, which could be quickly concealed or altered. Less time-critical manifestations included: surface cratering; underground cavity and rubble zone; residual underground radioactivity; surface changes from ground spallation; argon gas⁵⁹; changes in ground water level; and anomalies of heat, pressure and gas flow within the fractured geology.⁶⁰

Zucca's report was not intended to address political questions *per se*, but he did acknowledge the political sensitivity of questions relating to: information and procedures for "triggering" and deciding on an OSI; timing; the size of the inspection area; restriction of access in the event of national security sensitivities; and the terms and requirements, if any, of a consultation and clarification process. Since there was general agreement on what an OSI would look for, discussion in 1995 skirted around the politically sensitive issues. Many countries put forward working papers, exchanging information on national positions, but until the scope was agreed, there was little pressure to resolve other issues. By the end of 1995, the problems and

disagreements relating to inspections were at least out in the open and could be summed up as a series of questions. First, and most importantly: by whom should an OSI request be made: states parties only, the CTBT Organisation or both? Secondly, there was the question of what kind of evidence would be permissible to use when making an OSI request: data from the IMS only, or would nationally acquired information (from intelligence sources or satellites, for example) be acceptable as well? If NTM were accepted, should such information be evaluated on the same terms as IMS data or be accorded different weight?

A further question divided negotiators into advocates of either a 'red light' or 'green light' decisionmaking process: assuming an executive council with the right and responsibility to authorise inspections, should the procedure be made easy, for the sake of speed, or more stringent, to avoid unnecessary intrusion on a state's sovereign territory? Somewhat confusingly for many delegations, the 'red light' was less stringent because it provided for a requested OSI to be conducted automatically unless the executive council voted to stop the OSI (giving it the 'red light'), for which it would require a specified majority (the options were for a simple, two-thirds or three quarters majority). Under the 'green light' procedure, the executive council would be required to consider any OSI request, which would only go ahead on the basis of council agreement to give it the 'green light' (again, by a possible simple, two-thirds or three quarters majority).

When negotiations reconvened in January 1996, the competing approaches to OSI had been narrowed down to three broad issues: the role of transparency, consultations and clarification; the informational basis on which an inspection could be triggered, i.e. a determination of the role of NTM; and the bundle of questions relating to the decisionmaking process, access, timelines and whether inspections should be undertaken in phases. Each of these questions hinged to some degree on the others, and all required political decisions that carried sensitive burdens among powerful domestic interest groups dealing with intelligence and national security.

Transparency

During the CWC an important distinction had been drawn between routine inspections, aimed at verifying declarations (while also monitoring for signs of

undeclared activity) and challenge inspections, triggered on the basis of suspicions that clandestine activities in violation of the treaty might have taken place.⁶¹ Given the nature of nuclear tests, routine inspections were dismissed as unnecessary for the CTBT, but suggestions were made to open certain areas or activities to transparency measures. The major concerns focused on the former nuclear test sites, mining areas, locations of large chemical explosions, and caverns with potential for decoupling (masking the signature) of nuclear explosions. The proposed transparency measures included declaration and notification prior to activities that might be registered as ambiguous by the IMS, and information and clarification following any anomalous seismic events or releases of radioactivity.

The NNWS themselves were divided about transparency and what would constitute effective – and cost effective – verification. Some advocated observers in the event of particularly large chemical explosions, but this was rejected as overly expensive and time-consuming. Sweden advocated notifying the CTBTO of chemical explosions above 500 tons, but Australia and Canada (both of which had to pay attention to the concerns of their commercial mining companies) argued against, on grounds that this “would serve no useful purpose without an observer being present at the time of the blast”.⁶² Instead, they proposed that there should be transparency measures with respect to the former nuclear test sites, as well as declarations on the locations of frequent and significant explosions, and technology transfer to enable more countries to make use of ripple-firing techniques, which were regarded as less likely to be confused with the seismic signature of a nuclear explosion. These ideas, as well as discussions of the potential OSI requirements associated with proposals from Germany and Sweden for the treaty scope to cover preparations for testing, did not survive the opposition of the weapon states and others.⁶³ Associated with transparency and confidence-building measures, most states argued that there should be an opportunity for consultation and clarification following detection of an ambiguous event, but they disagreed on whether consultations should be mandatory, prior to an OSI request, and if so, for how long and between whom: just the challenging state party and the challenged state party, or whether the technical secretariat and/or the executive council should be involved at this stage.

Phased Inspections, Decisionmaking and Access

As some states questioned the actual importance of evidence deemed time critical, such as local aftershocks or the venting of xenon gas, the United States promoted the idea of challenge inspections in phases, augmenting the level of intrusion if successive phases were warranted by a failure to resolve the ambiguity or suspicion in an earlier phase. The idea for a three-phase process was first put forward in June 1994.⁶⁴ After refining its approach, more as a result of discussions among its domestic experts than negotiations with other delegations, the United States put forward further proposals in June and July 1995, this time advocating that there should be two discrete phases.⁶⁵ In the US view, a two-phase approach would “balance... the competing requirements for ...quick and early access to an inspection site, cost effectiveness, limited intrusiveness, and prevention of frivolous and abusive OSI requests”.⁶⁶

Conducting OSI in phases had implications for the decisionmaking process: would an executive council decision be required for each phase or could the next phase proceed automatically if the inspection team considered it needed further data? In the US proposal, each phase would need to be requested by a state party, but there was also the option of choosing means other than OSI, including direct consultations, to clarify ambiguous events. A challenging state party would have to balance the political circumstances and risks of being judged to have made a frivolous or abusive request, but “if states parties act responsibly, the US approach will keep the number of OSIs and OSI costs manageable”.⁶⁷ In addition, the US papers suggested that investigations into ambiguous events outside the jurisdiction of any particular state party, such as in international waters, could be undertaken by one or more states parties individually, with or without the involvement of the technical secretariat.⁶⁸ The G-21 immediately objected to extending an individual state’s investigating rights in this way, counter-proposing that the CTBTO should have “exclusive responsibility” for OSI “in areas both within and beyond the jurisdiction or control of states parties”.⁶⁹

As the US delegation argued strenuously for phased OSI, the rest of the P-5 were divided along unusual lines. France and China appeared initially open but wanted to discuss ideas that would significantly modify the US concept. Russia and Britain opposed the two-phase approach altogether, preferring there to be one request and

one decision, although they had different views about what the actual decision mechanism should be. China advocated a mandatory consultation and clarification process of up to three days and a consideration and preparation stage taking up to three weeks. The Chinese delegation consequently suggested that a less intrusive OSI, not exceeding 15 days, could be followed by a second phase of up to 30 days. Both phases would require a 'green light' vote in favour by a two-thirds majority of the executive council.⁷⁰ Russia preferred either a voluntary or compulsory consultation and clarification process, arguing that OSI, though an essential part of the verification regime, should be presumed an exception. Reasoning that "as a rule, all other possibilities of clearing up the situation will be exhausted before a request is made for inspection", Russia wanted there to be a single decision to undertake an inspection, taken within seven days of the initial request by a state party. The decision would need a 'green light' vote in favour by a two-thirds majority of the executive council. Suggesting a maximum of 40 days per inspection unless drilling was necessary, Russia emphasised that there needed to be some flexibility. The time-frame should be determined by the type of ambiguous event and evidence available: up to the designated maximum, an OSI should be able to be extended or terminated early depending on the evidence. If drilling were required, a separate decision should be taken by the Director-General and confirmed by the executive council permitting an additional 50 days for this purpose.⁷¹

Outside the P-5, the D-3 were the most active participants in the OSI negotiations. Both Pakistan and India joined China in advocating a mandatory period of consultation and clarification; they argued that only once this has failed to resolve the ambiguity would the challenging state party's request for an OSI be submitted to the executive council, which would have to provide authorisation by a 'green light' vote of two-thirds or three-quarters majority for the inspection to go ahead. Maintaining that OSI should not be conducted in a "hasty manner", Pakistan's Ambassador Munir Akram also questioned the premise on which the two-phase argument rested, averring that in a well camouflaged test, noble gas releases and after shocks could be made negligible.⁷²

During the negotiations, Israel put in a number of working papers relating to OSI procedures and technologies, even proposing draft treaty text to ensure the protection

of confidentiality and national security under the verification regime, particularly with respect to OSI. Up to that point, Israel – the only D-3 state not then a member of the CD – had participated in the CTBT negotiations, but was rather quiet and unobtrusive on most issues.⁷³ It was assumed that Israel was in close consultation with the United States and in agreement with its major positions. With respect to OSI, however, Israel's military and intelligence lobbies were active in pushing for a slower, more restrictive and much less intrusive OSI provision than demanded by its ally. Concerned that some of its Middle East neighbours might use the OSI provision to demand frequent inspections at the Dimona nuclear facility or elsewhere, Israel's positions were almost diametrically opposed to the American proposals on three major issues: elevating the role of the technical secretariat and diminishing the rights of states parties in OSI requests; a long mandatory consultation period; and stringent decisionmaking procedures. For example, Israel opposed separately phased OSI and wanted authorisation to be on the basis of one 'green light' decision, requiring the positive vote of a two-thirds majority. In its view, although a treaty party may submit a request, with evidence, it should be the technical secretariat rather than an individual state party that would have the primary right to request an inspection. Moreover, the Israelis wanted a time-frame allowing ten days for mandatory consultation, clarification and consideration of relevant information, before any OSI request would go before the executive council. Israel also pushed for inspected states parties to have the right to "exclude locations and facilities at the initial stage" of an OSI and "to exempt sensitive facilities from access on the basis of national security, proprietary rights and health and safety reasons."⁷⁴ If denying access, a state party would be required to "make every reasonable effort to demonstrate through alternative means that a nuclear explosion has not been conducted there" and should not invoke denial provisions to conceal a clandestine test.⁷⁵

Despite acknowledging Israel's concerns and accepting that there might be a need for "managed access" to "protect certain sensitive facilities within the requested area from OSI intrusion", the US delegation maintained its position that the presumption should be full access, with restrictions only as the exception.⁷⁶ Managed access was a problem for more than just Israel. Russia also referred to the right to protect national security during an OSI by means of managed or regulated access, and proposed that

the inspected state party could provide convincing evidence “that the excluded part of the region had no connection with the ambiguous event”.⁷⁷

National Technical Means

An issue which was discussed from the beginning and only resolved at the very end of the negotiations was whether to permit information derived from NTM to supplement IMS data or to support a request for an inspection. The US position was at one extreme, pushing for any kind of data to be permissible in support of a state party’s request for an OSI.⁷⁸ Arguing that NTM must be admitted as a legitimate component of CTBT verification, the US frequently cited the belated discovery of Iraq’s nuclear programme as vindication of its position that a multilateral verification system, of itself, could not be fully relied on.⁷⁹

Russia, France, Britain, and indeed most of the Western and Eastern European delegations favoured incorporation of some kinds of NTM data to complement the IMS, but the major states disagreed about where and how to draw the line. Russia, for example, supported inclusion of IMS-type data but wanted definite exclusion of communications intercepts (COMINT) and human intelligence (HUMINT), which it characterised as espionage. China and Pakistan were at the opposite extreme to the United States, and opposed any inclusion of information derived from NTM, a position substantially supported by the G-21 during the first two years of negotiations. Both countries claimed to have been victimised by false American intelligence, a point underlined by Sha’s reference to “a self-assumed mandate as a ‘world police’”.⁸⁰ As far as China was concerned, sovereign states were entitled to develop NTM for the purposes of conducting activities “within the scope of their sovereignty”, but because NTM were “inherently selective, arbitrary and subjective” it would be “unacceptable” for states to take advantage of NTM outside their own jurisdiction.⁸¹ G-21 members based their arguments more generally on the principle of nondiscrimination and the mandate’s injunction that the treaty should be “multilaterally verifiable”. They did not want to legitimise a means of verification that would be available only to a few, privileged states, and which could be exercised in exclusive, discriminatory or abusive ways.⁸²

Countering the G-21, the United States insisted that the mandate also required the treaty to be “effectively verifiable”, which it would not be if it prevented national means from being utilised to supplement potential inadequacies in the multilateral system.⁸³ Utilising what many regarded as coercive hostage-taking tactics in an attempt to show that he had no room to manoeuvre, Ledogar portrayed OSI and the permissibility of NTM as a “treaty-breaker” for the US government.⁸⁴ Anxious to avoid a deadlock on the issue, some of the P-5 and Western NNWS sought to erode G-21 solidarity on the issue by offering modalities for the limited incorporation of NTM to meet some of the G-21 concerns about discriminatory use. For the other NWS, the primary motivation was to isolate China and force Beijing out of its intransigent posture. Others hoped to develop a precedent for a more accountable incorporation of data and evidence acquired from national sources. While aimed primarily at the G-21 and China, the bridging proposals also challenged Washington’s hard line.

France, for example, made the unusual proposal that OSI could be requested on the basis of information from the IMS or from NTM, but that different weight should be accorded to each.⁸⁵ South Africa built on France’s proposal, advocating an “objective” role for the CTBTO in evaluating NTM data provided to it.⁸⁶ Israel proposed that states parties could put data from their national facilities at the disposal of the IDC, or even allow the IDC and technical secretariat direct access to NTM data, thereby allowing for NTM but providing some level of screening and control of access and source.⁸⁷ Other countries reinforced the concept of a limited legitimacy for NTM by offering to supply the IDC with data from their national laboratories. As a consequence of a widening of the debate to include more NNWS, a number of G-21 delegations began to show interest in considering how nationally or commercially acquired data could be fed into or accessed by the IDC. They were interested in ideas for how the verification regime might benefit from NTM without surrendering its independence to the individual power of certain states with very extensive and sophisticated surveillance and intelligence resources. With the apparent aim of preventing such slippage among those whose backing it had cultivated, China underlined the case for opposing NTM in further working papers and reiterated its position in another strongly-worded statement in September 1995, in which it argued that “no NTM should be allowed” in the IMS. In a textbook example of hostage-

taking tactics, China then baldly stated that it would “not accept the triggering of OSI by NTM data or ‘any other information’”.⁸⁸

The bridging efforts began to bear fruit in early 1996, as illustrated by the Australian and Iranian draft texts. Of most significance, Iran’s draft text showed that one of the staunchest opponents of NTM was prepared to compromise. While maintaining that OSI be based solely on IMS data, Iran’s draft allowed for supplementary information to be considered by the technical secretariat.⁸⁹ The United States continued to reject all such attempts to find a compromise, arguing that they would not be convincing to the intelligence agencies and US Senate. As the US ratification problems would later show, there is sometimes a fine line between employing the hostage-taking tactic to coerce others to accede to one’s wishes and a genuine bottom line “treaty-breaker” dictated by domestic or other factors.

Running out of time by August, and faced with intransigence on both sides, Ramaker decided that NTM should be “acceptable in principle, but not in any unqualified manner”. The draft text therefore allowed any relevant information, including national technical means, “consistent with generally recognised principles of international law”, a phrase understood to exclude espionage. This satisfied Russia, but a number of countries continued to raise concerns about legitimising NTM. Ramaker undertook consultations: on one side he was faced with China, Pakistan, and to a lesser extent Iran and India; on the other was the United States, still insisting that the issue was a “treaty breaker”. Ramaker subsequently decided not to try and alter the treaty text. Instead, he made a statement on the record to allay some of the expressed fears about abuse of NTM or OSI, later including this in his report. With regard to NTM, he emphasised that verification activities would be based on “objective information... limited to the subject matter of the Treaty” and carried out on the basis of “full respect for the sovereignty of states parties”.⁹⁰

OSI: A Make or Break Issue

The Iranian and Australian model texts encompassed broadly similar approaches on OSI, but with some important differences. Both favoured a presumption of access with two phases for inspections. For the initial phase, Australia echoed the French proposal for different decisionmaking procedures depending on whether the OSI

request was based on IMS data or solely on NTM. Iran proposed that an OSI request could rely only on IMS data and advocated a simple red-light process by which a vote by three-quarters of the executive council would be necessary to prevent the initial phase of an OSI from going ahead. Both drafts proposed a two-thirds majority to give the green light to any consecutive phase of OSI.⁹¹ China's position appeared to harden, as Sha Zukang made it publicly known that OSI would be a crucial factor in the success or failure of the treaty. Echoing Ledogar, he declared it a "make or break" issue.⁹²

Attempting to negotiate a compromise between the US and Chinese positions, Ramaker's May 28 draft specified that a green-light simple majority decision of the executive council would be necessary to initiate an inspection. As is often the case with bridging proposals that split the difference, neither the United States nor China was happy with this. But the US delegation, which had been consulted by Ramaker prior to his tabling the draft, said it could "live with it", while Sha declared that China would not.⁹³ Pointing to the distinction made elsewhere in the text between procedural matters (requiring a simple majority) and substantive matters, Sha stated that "the launching of OSI can only be considered as a substantive issue", which would thereby require at least a two-thirds majority of the executive council.⁹⁴ During intensive P-5 negotiations on the issue, Britain, France and Russia attempted to put pressure on the United States by indicating that they would accept a green light OSI process requiring approval by three-fifths of the executive council, as China wanted. The United States at first refused to go above the simple majority in the Chair's draft. When Ramaker repeated this formula in the June 28 text, Sha stated again that without concessions on OSI decisionmaking, China would be unable to sign the treaty.⁹⁵

Insisting on bilateral negotiations with the United States, Sha argued for a three-fifths majority. Beijing had calculated the balance on the executive council and considered that 30 out of the 51 members was the minimum assurance it needed that the United States and its allies did not have the automatic weight to vote for an OSI request irrespective of the supporting evidence. Beijing preferred two-thirds (34 members of the council), but proposed three-fifths as a bearable compromise, having previously ascertained that Britain, France and Russia would go along with this. Under pressure

from the other NWS, and despite insisting that the text should not be reopened, the United States finally agreed to an amendment whereby an OSI would be authorised by “at least 30 affirmative votes” of the 51-member council. This was the only substantive amendment to the June 28 text.⁹⁶

The US was not the only delegation to be concerned that requiring a green light decision of the council to permit an inspection could cause delays, enabling time-critical evidence to be dispersed or erased. Ramaker’s text dealt with this by providing a practical but strict timeline for the various stages between an OSI request and arrival at the site to be inspected, so that the time taken must not exceed one week. According to the final text, once an inspection is initiated, it can only be halted by a majority decision of the council, or by recommendation of the inspection team (unless countermanded by the council). If drilling is to be conducted, a further green light decision of the council must be sought.⁹⁷

Concerns about intrusion and effectiveness were balanced with overflight provisions and managed access. Although these did not cover all of the Russian and Israeli concerns, both were persuaded not to reopen negotiations. The envisaged time-frame for an inspection is 60 days, with the possibility of an extension of up to 70 days, subject to a majority decision of the council. Provisions covering the conduct of inspections were intended to diminish the opportunity for abuse while ensuring that the inspection team is not prevented from carrying out its mandate by undue delays and impediments thrown up by an inspected state. Responding to concerns expressed by Pakistan, India and others, Ramaker underlined that the sole purpose of an OSI was to gather any facts which might clarify whether a nuclear weapon test explosion had occurred and to assist in identifying a possible violator, and that requesting states were under an obligation to keep the OSI request within the scope of the treaty.⁹⁸ States would therefore be allowed to protect sensitive facilities and information unrelated to compliance with the treaty. Inspections would move from less intrusive to more intrusive procedures. In all cases, the decision to conduct an OSI would have to include approval of a concrete inspection plan and mandate drawn up by the technical secretariat. Inspectors and access points would have to be identified to the CTBTO within 30 days of the treaty’s entry into force for a particular country (and updated as appropriate). Provisions were worked out for unusual circumstances, such

as where the site under one state's jurisdiction or control is on the territory of another state (as with US bases in Europe or Japan). It was agreed that three observers from the requesting party or parties would be permitted to accompany the team, subject to the inspected party's agreement on the actual personnel. Arising from the experiences of the UNSCOM inspections in Iraq, the treaty also enshrined privileges and immunities for personnel carrying out an inspection, consistent with diplomatic status.

In response to some delegations' concerns that the OSI process could be misused for other purposes, Ramaker also included penalties in the event that the executive council deemed an OSI request to have been "frivolous or abusive". Penalties could be financial (requiring the requesting state party to bear the costs incurred) or any of the measures in article V of the treaty, which covers the redressing of a situation, compliance and sanctions. Accordingly, failure to comply with treaty obligations or abuse of the treaty's provisions could result in penalties ranging from suspension of membership rights, collective measures in conformity with international law, and the taking of cases of 'particular gravity' to the United Nations. An earlier reference in the rolling text giving a role to the UN General Assembly and Security Council in the enforcement of the CTBT (not specific to, but inclusive of OSI) was left out of the final draft text. Highlighting the problematic congruence of the P-5 with the NWS, opposition to giving the UN Security Council a formal role was based on non-aligned concerns that the permanent representation of the declared nuclear weapon states in the UN Security Council could cause bias or prompt a misuse of their veto power to protect themselves or allies.⁹⁹

Concessions and Trade-offs: Making the Adequate Bearable

In previous attempts to negotiate a comprehensive test ban, notably in 1958-63 and 1977-80, verification had become the overt stumbling block to agreement. It did not play that role in 1994-96. There were, of course, conflicts over verification during the negotiations, but they were resolved largely through the normal processes and channels of multilateral and, at times, minilateral bargaining. Civil society, including epistemic actors from rival nuclear laboratories and NGOs, was much less engaged on verification issues in the 1994-96 CTB negotiations than in the past, largely

because developments since the INF Treaty and collapse of the Soviet Union had drawn the ideological heat out of much of the issue. By contrast, government scientists were important in building knowledge and embedding verification norms and principles among the participating states. Nevertheless, the verification outcome largely centred on the attitudes and conflicts among the P-5 and D-3: echoing the concerns that had underpinned the earlier US-Soviet adequate/bearable dichotomy, the United States took a stringent policing approach, while some of the others, notably China, India, Pakistan and Israel, were concerned to protect their sites, facilities and military interests from unwanted scrutiny.

This was particularly true of the negotiations on on-site inspections and national technical means, where the familiar dilemmas of sovereignty (and the risk of cheating) versus intrusion (and the risk of spying) were played out, but this time did not derail the negotiations. Though US negotiators again tried to portray resistance to intrusive verification as rooted in suspect politics and even more suspect motives, Israel's inclusion in the resistant group exposed a more fundamental link: these were all nuclear weapon possessors or aspirants, with perceptions of real or potential victimisation from dominant powers or aggressive neighbours. In opposing intrusive inspections and NTM, China, India, Iran and Pakistan all evoked specific incidents of unjust accusation and "harassment" from the United States; Israel's fear was that its neighbours in the Middle East might "abuse" inspections procedures to undermine Israel's security (and nuclear programme).

Once China had made its decision to join the CTBT, as was clear in the concessions it made on other issues, including PNE, during the first part of 1996, there was a strong incentive to find a solution on OSI and NTM, which Ledogar and Sha achieved, with the bridging assistance of Ramaker and some of the NNWS. Though Ledogar had stressed that OSI and NTM were treaty-breakers, his problem was not the Clinton administration. Having made the CTBT a major foreign policy objective, Clinton wanted the treaty concluded. Throughout the verification negotiations, Ledogar's principal difficulty was that he had the future ghost of Congressional ratification peering over his shoulder. For that, he had to be sure to deliver a strong package that would appease the intelligence agencies and the Pentagon. Nevertheless, even though the US delegation prioritised verification and, in fact, negotiated with a high measure

of success on all its provisions, this was not enough when the Republicans at home decided to attack the treaty on ideological grounds, making criticism of the verification system a major plank in their opposition to the ratification of the CTBT in 1999.

The IMS was the only aspect of the CTB negotiations to conform recognisably with Ruggie's model of multilateralism. Notwithstanding material asymmetries in terms of capabilities, geostrategic location and so on, Ruggie's principles of diffuse reciprocity, shared responsibilities and benefits, and nondiscrimination were reflected in the IMS negotiations. The majority of problems over the IMS were based on cognitive dissonance, in large part due to differences of technical expertise and opinion over capabilities and coverage, combined with some national interests regarding the purchase and supply of technologies and location of specific stations. Most were able to be resolved through constructive, integrative multilateral negotiations. Peter Marshall, in particular, used a range of cognitive shaping tactics to achieve convergence, including unpacking complex issues, demystifying technical questions, and training the scientists and diplomats from as many countries as possible, including the usually marginalised nonaligned states. By such means, he embedded the IMS negotiations in "consensual knowledge",¹⁰⁰ a process that also reduced the politicisation of disagreements, thereby encouraging cooperative convergence.

Even so, concession-trading among the P-5 was necessary to resolve some of the sharper disputes. As already discussed, Russia's late demand for additional monitoring at the US and Chinese test sites was not really about the IMS, but in reaction to not having been adequately consulted when the United States pre-empted the P-5 threshold negotiations in August 1995 and decided in favour of a zero yield scope. Russia dressed its linkage of these two issues in practical terms: if the treaty had contained a low threshold, as Moscow wanted, then the previously negotiated IMS would have come close enough to Russia's verification requirement that militarily useful explosions were not being conducted at yields significantly above the threshold agreement. The zero yield scope ruled out hydronuclear and low yield explosions altogether; in reaction, Moscow raised concerns (legitimate, if not convincing) that geological conditions at Lop Nor and Nevada – as opposed to

Novaya Zemlya – might conceal attempts by the other weapon states to conduct very low yield testing clandestinely. Though Marshall attempted to work out a technical solution, in the end resolution came by means of a P-5 trade-off spearheaded by the United States, which also assuaged sore Russian feelings by undertaking closer bilateral consultations. In the same P-5 package deal, Russia agreed to drop its long standing but unsupported proposal for a reduced radionuclide network bolstered by three specially equipped sampling planes.

Though it is important in negotiations analysis to be wary of ulterior motives or underlying political purpose behind states' positions, some disputes may genuinely arise from pragmatic differences of view or resources. For example, some delegates sought to portray Russia's advocacy of a less comprehensive radionuclide network as stemming from a desire to escape close monitoring of its radiation emissions. But if Moscow's premise was right – that an outright violation after entry into force of the treaty was unlikely – the proposal for three appropriately equipped sampling planes could have made sense as a cost-effective deterrent. Despite US scepticism, many Geneva diplomats did recognise that underlying a number of Russia's verification positions was a concern to avoid an excessive financial burden. Given the post-Chernobyl recognition of the merits of early detection of radiation releases, however, most delegations considered that the collateral benefits of a substantial radionuclide network outweighed the costs.

Similarly, despite inevitable attempts to find a sinister motivation behind the Chinese and Pakistani opposition to noble gas monitoring and their determination to include satellites and EMP monitoring in the treaty, the reasons may have been more straightforward. While Pakistan's advocacy was clearly due to its political relations with China, Beijing's positions were backed up by feasible technical assumptions and cost-benefit calculations.¹⁰¹ Though held until very late in the negotiations, such differences were eventually resolved through a combination of P-5 and multilateral trade-offs. In an example of the first, China traded concessions with the United States and Russia over NTM. In examples of the second, Ramaker brokered several bridging compromises. Although he omitted satellites and EMP sensors from the IMS, Ramaker included in the treaty text provisions for "improvement of the verification regime", permitting technologies or stations to be added to or deleted

from the IMS on the basis of consensus among the executive council, without requiring the full process of an amendment conference. Recognising that the value of satellite information to the verification regime was not the main issue of dispute and that those who opposed a dedicated satellite network did so primarily on grounds of cost, Ramaker also included a provision for “cooperative arrangements” whereby any state party could make data from non-IMS-incorporated national stations available to the IMS and IDC. Paradoxically, although introduced to placate China and Pakistan, the reference to IMS-type technologies opens the treaty’s door to NTM, which both states had wanted to rule out. At the very least, Ramaker’s team engaged in some neat mediation, leaving an ambiguity about whether this provision could be a means whereby information from national or commercial satellites could be fed into the IDC, if required.

Several middle power NNWS, including the Chair, used a range of bridging techniques to promote convergence. For example, steering clear of explicit reference to evolutionary verification, and so avoiding a head-on clash with the United States, Britain and France, the middle powers essentially supported the Russian and nonaligned position and managed to get the evolutionary concept incorporated into the treaty in everything but name. This was possible because the Western NNWS, some of whom had technical experts on a par with those of the nuclear powers, were prepared at times to challenge the dominance of US technical assumptions and come down in support of positions favoured by the more marginalised, nonaligned states.¹⁰² Western NNWS also employed strategies aimed at avoiding a recurrence of the verification conflicts that had contributed to the failure of previous attempts to achieve a CTBT. Germany, chairing the verification working group in the final year, insisted on engaging the experts of as many delegations as possible in weighing the technical objectives, capabilities, parameters and criteria for international verification, in the hope that differences could be bypassed or narrowed without having to confront the competing adequate/bearable perceptions that had so bedevilled past test ban negotiations. It must also be recognised that US positions on the IMS were generally more pragmatic and less ‘gold-plated’ than would have been predicted from its stance in previous test ban negotiations. For this reason, the US intransigence over limiting the interpretation of data by the IDC took many delegations by surprise. Although there were complaints in the corridors, and Western sympathy with the G-

21 position was fairly widespread, it was not until Germany openly challenged the United States, pitting its solid verification expertise against the US arguments, that the logjam began to shift. Ramaker's solution was typically managerial, adroitly splitting the difference.

Peter Marshall's success in managing the complexities of the IMS negotiations was not a foregone conclusion. He was professionally attached to Britain's Atomic Weapons Establishment (AWE) at Aldermaston (albeit the verification wing at Blacknest¹⁰³). This connection with the UK nuclear weapons laboratories could have raised G-21 suspicions about his objectivity, particularly since the UK delegation was more generally perceived as negative towards the CTB and obstructive in its tactics. Though representing the government, Marshall was an influential epistemic actor, whose high level of technical expertise and attention to detail commanded respect among his scientific peers in other delegations. His technical authority also gave him some measure of independence from other aspects of UK policy, with which he frequently disagreed. In many ways, therefore, he also displayed the characteristics of a norm entrepreneur, pushing for regime-enhancing outcomes and a strengthening of verification in principle and practice, in the face of Britain's narrower objectives. Lacking significant political power to impose outcomes, Marshall's epistemic authority and low key, inclusive management style persuaded all sides of his willingness to listen and take their arguments seriously, a skill which enabled him to carry opposition and enable the disparate views and interests to reach convergence.

The only significant failure for the IMS was India's withdrawal of its stations. Since India's participation in the IMS benefited others as much if not more than India itself, India caused more pain to others than itself by pulling out of this part of the treaty. As will be discussed in the next chapter, when the badly conceived British strategy on entry into force backfired, the high costs continue to be paid by supporters of the CTBT and nonproliferation regimes rather than the intended target, India.

Notes

¹ Tony Blair, UK Prime Minister, Jacques Chirac, President of France, and Gerhard Schroeder, Chancellor of Germany, "A Treaty We All Need", *New York Times*, October 8, 1999.

² The provisions under consideration would have banned all testing, but with a grey area based on the view that underground tests below a 20 kt verification baseline were not detectable. See the discussion of this in Glenn T. Seaborg, *Kennedy, Khrushchev and the Test Ban* (Berkeley, CA: University of California Press, 1981).

³ For example, the influential coterie around Edward Teller at the Lawrence Livermore National Laboratories developed complex evasion scenarios that were theoretically possible but of negligible military value and barely feasible in real physical conditions. Seaborg, 1981, pp 6-18.

⁴ Nancy W. Gallagher, *The Politics of Verification* (Baltimore, MD and London: The Johns Hopkins University Press, 1999), pp 29-30. A further confusion between Soviet and US understandings of the terms 'control' and 'verification' arose as some used 'control' to denote rules in regard to treaty obligations, whereas 'verification' was more specifically applied to methods used for ascertaining facts about compliance. Moreover, during the early test ban negotiations, the unmanned seismic stations, later dubbed 'black boxes', were also referred to as control posts. See Alva Myrdal, *The Game of Disarmament: How the United States and Russia Run the Arms Race*, (Manchester: Manchester University Press, 1977), p 293.

⁵ Jerome Wiesner, science adviser to Presidents Eisenhower and Kennedy and an early advocate of verification, noted that the cold war political climate meant that "projects and proposals, no matter how promising, will be evaluated in a negative state of mind born of fear". Quoted in Allen S. Krass, "Nuclear Verification in the Post-Cold War Period", in J.B. Poole & R. Guthrie, *Verification 1993: Peacekeeping, Arms Control and the Environment*, (London: Brassey's/VERTIC, 1993) p 70.

⁶ Sir Michael Wright, *Disarm and Verify*, (London: Chatto and Windus, 1964) p 76.

⁷ See Chapter 3 for a discussion of the PTBT.

⁸ The BWC was hived off from the CWC and concluded separately in 1972 as a norm-building treaty, without verification provisions, in part because multilateral verification was viewed as impossibly complicated to achieve.

⁹ Allan S. Krass, *Verification: How Much is Enough?*, (London: Taylor and Francis/SIPRI, 1985).

¹⁰ As discussed later, it was decided that treaty parties should themselves make the determination of what was a false alarm, but the ability to distinguish was one of the criteria for the verification system.

¹¹ For fuller detail, see Rebecca Johnson, "Verifying a Comprehensive Test Ban Treaty: Key Issues in the 1994 Negotiations", in J.B. Poole and R. Guthrie (eds.) *Verification 1995: Arms Control, Peacekeeping and the Environment* (Oxford: Westview Press/VERTIC, 1995) pp 37-54.

¹² The GSE was established by the UN Conference of the Committee on Disarmament (which, as discussed in Chapter 2, became the CD), with a mandate to conceptualise and test an international seismic data-exchange system. By early 1994, the GSE was ready to test its third technical test (known as GSETT-3), incorporating a three tier network of seismic stations, relying on 'alpha stations' transmitting data continuously to an international data centre, 'beta stations' to be connected into national data centres and accessed as required by the international system, and gamma stations which would only supply supplementary data from national and regional networks. For 18 years prior to the start of the CTBT negotiations, the GSE had toiled away at seismic verification, hampered by a mandate that severely restricted its work to a narrowly-conceived technical realm of seismic measuring. Although there was some truth to the criticism that the GSE mandate left the scientists in a political vacuum which diminished the usefulness of their work, the GSE's technical tests were able to provide a basis for the seismic network of primary and auxiliary stations which were eventually incorporated into the treaty. During the CTBT negotiations, the GSE continued in parallel with the work of the Nuclear Test Ban Committee, reporting periodically to the CD plenaries.

¹³ Ola Dahlman, "A Global Seismological System for Nuclear Test Ban Monitoring", in J.B. Poole (ed.) *Verification Report 1991: Yearbook on Arms Control and Environmental Agreements*, (London and New York: VERTIC/Apex Press, 1991), pp 123-130.

¹⁴ Krass, 1985, pp 6-13.

¹⁵ Ibid. p 7.

¹⁶ See Chapter 3 for a discussion of the NRDC's joint experiments with the Soviet Academy of Sciences. See also Natural Resources Defense Council, *Phasing out Nuclear Weapons Tests*, (Washington DC: NRDC, 1989); and Eric Arnett (ed.) *Implementing the Comprehensive Test Ban: New Aspects of Definition, Organization and Verification*, SIPRI Report No 8, (Oxford: Oxford University Press/SIPRI, 1994). A senior scientist from the UK nuclear weapons programme recently suggested that the Republicans, and particularly the administration of George W. Bush are again using

the tactic of citing verification concerns to obstruct arms control, indicating that despite the positive developments seen in the CTB negotiations, civil society has failed to embed the new norms. Off the record conversations with the author, May 2002.

¹⁷ The Verification Technology Information Centre, *Scientific and Technical Aspects of the Verification of a Comprehensive Test Ban Treaty*, (London: VERTIC, April 1990). For definitions, see pp 1.4-2.1. VERTIC's detailed study on verifying a CTBT had been commissioned by Parliamentarians for Global Action for dissemination to governments and diplomats prior to the PTBT Amendment Conference. See Chapter 4.

¹⁸ Sidney N. Graybeal and Michael Krepon, "On-Site Inspections", in Michael Krepon and Mary Umberger (eds.) *Verification and Compliance* (Basingstoke: Macmillan Press, 1988) p 98.

¹⁹ See Chapter 2.

²⁰ Much has been written about Iraq's nuclear programme. See, for example, David Albright, Frans Berkhout and William Walker, *Plutonium and Highly Enriched Uranium 1996: World Inventories, Capabilities and Policies* (Oxford: Oxford University Press, 1997). On US policy responses to Iraq's proliferation challenge, see also Barry R. Schneider and William L. Dowdy (eds.) *Pulling Back from the Nuclear Brink: Reducing and Countering Nuclear Threats*, (London: Frank Cass, 1998) especially the articles by Robert L. Gallucci, "US Nonproliferation Policy: Lessons Learned from Our Experience with Iraq and North Korea", pp 3-15; and by David A. Kay, "Detecting Cheating on Nonproliferation Regimes: Lessons from our Iraqi Experience", pp 16-35.

²¹ For an excellent historical overview of these arguments, see Gallagher, 1999.

²² Informal paper, dated February, 1994, received by the author attached to the Chairman's Paper, Working Group on Verification, Ad Hoc Committee on a Nuclear Test Ban, February 18, 1994, CD/NTB/WG.1/1.

²³ Grigori Berdennikov, Statement to the ad hoc Committee on a Nuclear Test Ban, June 6, 1994 (unofficial translation).

²⁴ As introduced in Chapter 3, despite the fact that subsequent studies of past negotiations have revealed how data have been misrepresented, that scientific information can be manipulated for policy ends and, specifically, that scientists attached to the weapons laboratories have used information to promote preferred political outcomes, US policy-makers have continued to portray verification demands as based on scientific facts and therefore, essentially non-negotiable. See Gallagher, 1999.

²⁵ Joachim Schulze, "Verification for CTBT Compliance: Developments during the 1995 Negotiations", in J.B. Poole and R. Guthrie (eds.) *Verification 1996: Arms Control, Peacekeeping and the Environment*, (Oxford: Westview Press/VERTIC, 1996) pp 105-124. Dr Schulze served on the German delegation to the CD as a scientific adviser and participated in that capacity in the CTBT negotiations.

²⁶ Friend of the Chair (Non-Seismic Verification), Working Paper, *Illustration of Possible Networks of Sensors to Detect, Locate, and Identify Explosions Underground, Underwater and in the Atmosphere Based on the Reports of Experts*, CD/NTB/WP.181, September 2, 1994.

²⁷ Schulze, 1996, p 106.

²⁸ Grigori Berdennikov, March 7, 1996, CD/PV.728. Since France had announced closure of the Pacific test site after it completed its final test series, Russia subsequently agreed to drop the requirement for additional monitors at Moruroa.

²⁹ Author's off the record conversations with Russian officials, January 1996, confirmed by interviews with Victor Slipchenko (Vienna, October 8, 1999) and Grigori Berdennikov (Vienna, July 17, 2001). See also Rebecca Johnson, Geneva Update No 25, *Disarmament Diplomacy* 1, (January 1996) p 10, and Rebecca Johnson, *Comprehensive Test Ban Treaty: The Endgame*, ACRONYM 9, (London: Disarmament Intelligence Review, April 1996) p 18.

³⁰ Zou Yunhua, *China and the CTBT Negotiations*, (Stanford CA: Stanford University Center for International Security and Cooperation, 1998), p 16.

³¹ According to a senior British official, Sha Zukang was adamant that no stations in China would be relocated to accommodate the Russian complaint, and then 'opted out' of discussions concerning other changes, thereby passively accepting the repositioning of the Kazakhstan station. Conversation with the author, May 2002.

³² Schulze, 1996, p 115.

³³ In 1975, Edward Kennedy issued a press release asserting that "about one-fifth of our tests have vented, sending radioactive particles into the air". *Statement by Senator Edward M. Kennedy on Introducing a Resolution Urging the Negotiation of a Comprehensive Test Ban Treaty*, May 20, 1975.

- ³⁴ With regard to atmospheric tests, they argued that noble gas sensors would be superfluous because tests in the atmosphere could be detected, located and identified through other means, including monitoring for more long-lived radioactive particulates or aerosols. Zou, 1998, p 15.
- ³⁵ China, Working Paper, *The question of including noble gas monitoring capacity in the atmospheric radionuclide monitoring network*, September 5, 1995 CD/NTB/WP.268; and *International Monitoring System Expert Group Report*, September 15, 1995, CD/NTB/WP.269. See also Zou, 1998, p 16.
- ³⁶ Russian Federation, Working Paper, *The Use of Aircraft for Detecting Radioactive Products in Radioactivity Monitoring*, December 14, 1994, CD/NTB/WP.199.
- ³⁷ The SOFAR Channel is at approximately 1 km depth.
- ³⁸ Schulze, 1996, p 111.
- ³⁹ China challenged Marshall's calculation that an option comprising 18 satellites would add \$2,700 million to the cost of the IMS. Arguing for sensors to be combined with commercial satellites, China put forward its own assessment that nuclear-explosion sensors placed on 45 of the 66 satellites planned by Motorola Cellular Telecommunications for 1996-98 would provide full CTBT coverage for around \$50 million. See China's working paper on *Establishment of a Global Satellite Monitoring System*, November 13, 1994, CD/NTB/WP.188.
- ⁴⁰ China, Working Paper, *Establishment of a Global Electromagnetic Pulse Monitoring System*, February 20, 1995, CD/NTB/WP.217; and China, Working Paper, *Further Views on a Global EMP Monitoring System*, September 5, 1995, CD/NTB/WP.267.
- ⁴¹ China, *ibid.* WP.217; and Schulze, 1996.
- ⁴² See, for example, Australia, Working Paper, *Making CTBT Verification Information Accessible: Incorporation of Automated Preliminary Event Identification into International Data Centre Bulletins*, March 13, 1995, CD/NTB/WP.223. In June 1995, the G-21 issued a statement calling for the IDC to be empowered to analyse the data. From their point of view, it was not merely legitimate but desirable for the IDC to analyse the data into comprehensible bulletins, even highlighting anomalous events and providing preliminary identification with probability values, and that far from usurping, this would assist states in fulfilling their assessment responsibilities. The statement was intended to flag the nonaligned states' concerns and did not propose an alternative approach. *Statement of the Group of 21 on a Nuclear Test Ban*, June 30, 1995, CD/NTB/WP.248 (CD/1329).
- ⁴³ In option 1, close to the US position during 1995, the IDC would send out just the raw data, with no standardised event screening. Individual states parties would be responsible for filtering and analysing the data. Option 2 would provide for internationally standardised event screening according to criteria established by the CTBTO. For states parties requiring additional filtering, some technical assistance could be provided. Option 3 would provide the highest level of IDC support to states parties, with internationally standardised event analysis, screening according to nationally requested criteria, technical expert evaluation to assist in identifying events in the IDC screened event bulletin, and further technical assistance to set up data analysis at national data centres. *International Data Center Progress Report 3: Function and Products of the International Data Center*, Working Paper by a Friend of the Chair, CD/NTB/WP.312, February 27, 1996.
- ⁴⁴ Germany, *IDC Products*, CD/NTB/WP.320, March 12, 1996. For a fuller account of this debate, see Johnson, ACRONYM 9 (April 1996) pp 19-21.
- ⁴⁵ Tables 1-A, 2-A, 3 and 4 of Annex 1 to the Protocol to the Comprehensive Nuclear Test Ban Treaty, Part I, The International Monitoring System and International Data Centre Functions. See Appendix.
- ⁴⁶ As noted in Chapter 5, India withdrew all its IMS-designated facilities, consisting of: one primary seismic station; one auxiliary station; a radionuclide station and an infrasound station. In the CTBT Annexes to the Protocol, these are left where India's name would be expected, and denoted as "to be determined". See Appendix.
- ⁴⁷ Jessica Eve Stern, "All's Well that Ends Well? Verification and the CWC", in J.B. Poole & R. Guthrie (eds.) *Verification 1993: Peacekeeping, Arms Control and the Environment*, (London: Brassey's/VERTIC, 1993), p 33.
- ⁴⁸ During the Reagan presidency, in 1984, Vice President George Bush tabled a US draft text for the CWC containing provisions for a select group of states parties on a "fact-finding panel" to call for short-notice, "anytime, anywhere" inspections of suspected facilities and sites. By 1990, after President Gorbachev followed the INF breakthrough on verification by accepting the concept of "anytime, anywhere" inspections for the CWC, Washington retreated from its own position, following interagency vacillation and conflict between arms controllers and the intelligence agencies. After a further difficult interagency review, the United States put forward a much weaker, long drawn out process which made a nonsense of the concept of short-notice challenge inspections. This provoked conflict among Washington's Western allies. Australia, Britain and Japan took a formal position of

supporting the United States for alliance reasons, overruling strong objections from their own experts, while others, notably France, Germany, the Netherlands and Canada, opposed any weakening of OSI intrusiveness. Australia subsequently put forward a modified provision for challenge inspections, including UK proposals for managed access and mechanisms to deter governments from making frivolous or hostile OSI requests. Opinions differ about why the US position changed so dramatically during the negotiations. Some suggest that the “anytime, anywhere” position of 1984 was political posturing to embarrass the Soviet Union, which was never expected to accept such a position. See Findlay, 1993, pp 31-36. An alternative, not incompatible, analysis emphasises the role and intensified engagement of the US defence and intelligence communities and chemical industries once the CWC appeared to be achievable. There is some speculation that the major opponents of setting an “anytime, anywhere” precedent in OSI were to be found among those dealing with nuclear weapons, fearing that it could provide spying opportunities for commercial or military adversaries. See Gordon M. Burck, “The Chemical Weapons Convention Negotiations”, in J.B. Poole & R. Guthrie, (eds.) *Verification Report 1992: Yearbook on Arms Control and Environmental Agreements* (London: VERTIC, 1992) pp 126-128.

⁴⁹ Stern, 1993, pp 34-36.

⁵⁰ Findlay, 1993, pp 8-9 and 31-36; Burck, 1992, pp 122-130.

⁵¹ *Report of the Conference of Experts to Study the Methods of Detecting Violation of a Possible Agreement on the Suspension of Nuclear Tests, July 1 - August 21, 1958*, UN Secretariat Document, EXP/NUC/28, reproduced in Sir Michael Wright, 1964, Appendix I.

⁵² Carl F. Romney, “On-Site Inspection for Nuclear Test Verification: Past Research and Continuing Limits” in Lewis A. Dunn and Amy E. Gordon (eds.) *Arms Control Verification and the New Role of On-Site Inspection*, (Lexington MA: Lexington Books/Science Applications International Corporation, 1990) pp 58-59.

⁵³ See Chapter 3.

⁵⁴ Graybeal and Krepon, 1988, p 94.

⁵⁵ Timothy Pounds, “Proposals for On-Site Inspection over the Years: From the Baruch Plan to the Reagan Initiatives”, in Dunn and Gordon, 1990, pp 69-91.

⁵⁶ Prior to this, the NPT had incorporated safeguards agreements with the IAEA, entailing inspections at declared nuclear facilities, but these were obligatory only for the NNWS and did not cover weapons-related sites at all. In the 1970s, the PNET included a protocol providing for “routine” and “discretionary” rights of observation, according to which both sides would have a so-called routine right to have observers present if the planned aggregate yield of a notified PNE exceeded 150 kt and discretionary rights of observation and limited inspection in the event of PNEs of 100-150 kt. As it turned out, these OSI provisions were never evoked or implemented.

⁵⁷ The progression in Russia’s position can be seen from the following quote: “On-site inspection is the most important part of the international regime for verifying observance of the CTBT. It is in the nature of an exception, being resorted to only in the most serious situations, when there are genuine doubts about the observance of the Treaty, based on the identification of an ambiguous event having the characteristics of a nuclear explosion. It is presumed that, as a rule, all other possibilities of clearing up the situation will be exhausted before a request is made for inspection.” Russian Federation, Working Paper, *On-Site Inspections under a CTBT: the Russian Federation’s Approach*, CD/NTB/WP.249, June 30, 1995.

⁵⁸ As previously noted, two isotopes of xenon were of particular importance for early detection of a clandestine nuclear explosion: Xenon-133 (half-life 5 days) and Xenon-135 (half-life 9 hours).

⁵⁹ Argon-37, another nuclear explosion indicator, has a half-life of 35 days.

⁶⁰ *Report of the Working Group of Experts on On-Site Inspection to Working Group I on Verification: Phenomena; Technology; OSI Examples, Costs*, CD/NTB/WP.198, 15 December 1994.

⁶¹ Burck, 1992, p 124.

⁶² Canada also suggested that ‘black boxes’ (automated detectors) could be installed at certain mining sites. See the Canadian working paper on *The Comprehensive Test Ban Treaty and large chemical explosions*, CD/NTB/WP.233, March 31, 1995. See also Australia, Working Paper, *The identification of Australian mining explosions: a study of spectral characteristics*, CD/NTB/WP.232, March 31, 1995; Australia, Working Paper, *Chemical explosions: Some implications for CTBT verification drawing on Australian experiences*, CD/NTB/WP.231, March 31, 1995; and Australia, Working Paper, *Mining explosions in Australia and CTBT verification*, CD/NTB/WP.230, March 31, 1995.

⁶³ The United States proposed mandatory provision of information on sites where large chemical explosions are planned, but avoided mention of transparency and confidence building measures at previously used nuclear test sites. This test-site-based confidence-building measure, proposed by

Canada and Australia, received widespread support from the nonaligned countries, many of whom (as noted in Chapter 6) would have preferred the test sites to be closed down altogether. Instead, the US suggested that further voluntary information should be encouraged in the event of large explosions, after unforeseen seismic events such as earthquakes or mine collapses, and if there has been any accidental release of radioactivity which could raise alarms. See Rebecca Johnson, "The CTBT Endgame: the Major Obstacles", in J.B. Poole and R. Guthrie (eds.) *Verification 1996: Arms Control, Peacekeeping and the Environment*, (Oxford: Westview Press/VERTIC, 1996), pp 87-104.

⁶⁴ The early US proposal for phased OSI comprised: an initial phase within 7 days to catch the short-lived phenomena; an optional extended phase, using sensors and collecting samples; and an optional drilling phase, on grounds that the "only conclusive evidence of a nuclear explosion is the retrieval of a radioactive sample containing certain characteristic isotopes." United States of America, Working Paper, "Challenge" *On-Site Inspection Concept*, CD/NTB/WP.90, June 8, 1994.

⁶⁵ The US two-phase OSI proposal encompassed an initial phase, of "relatively short duration and low intrusiveness" and a second, more intrusive phase, of longer duration. Arguing the importance of speed to obtain time-critical evidence, the Americans proposed that the first phase should go ahead on a 'red light' basis, meaning that it would proceed automatically unless stopped by a two-thirds majority of the executive council. This initial phase would involve aerial overflight, visual inspection, seismological and radioactivity measurements; it should be undertaken if possible within seven days of detecting an ambiguous event, and conducted within two weeks. If more evidence were required, the second phase would be requested but could only go ahead if given a positive 'green light' by a simple majority of the executive council voting in favour. The second phase, less time sensitive but more intrusive, would employ a greater range of measuring equipment, including the placement of unattended sensors for considerable periods of time, and drilling if deemed necessary. See United States of America, Working Paper, *US Approach to On-Site Inspection*, CD/NTB/WP.238, June 9, 1995; United States of America, Working Paper, *US Draft Language on On-Site Inspection Provisions for the Rolling Test of the Treaty*, CD/NTB/WP.239, June 9, 1995; and United States of America, Working Paper, *Basic US Principles for an Effective OSI Regime*, CD/NTB/WP.253, July 10, 1995.

⁶⁶ Trying to persuade sceptics, the US argued that initial inspection could well provide enough evidence to dispel or confirm the suspicions which had triggered the OSI request, thereby obviating the need for further inspections. Only if the first phase failed to resolve the ambiguity would the longer, more intrusive and expensive inspection go ahead. United States of America, Working Paper, *Basic US Principles for an Effective OSI Regime*, CD/NTB/WP.253, July 10, 1995.

⁶⁷ Ibid.

⁶⁸ United States of America, Working Paper, *US Approach to On-Site Inspection*, CD/NTB/WP.238, June 9, 1995; United States of America, Working Paper, *US Draft Language on On-Site Inspection Provisions for the Rolling Test of the Treaty*, CD/NTB/WP.239, June 9, 1995; and United States of America, Working Paper, *Basic US Principles for an Effective OSI Regime*, CD/NTB/WP.253, July 10, 1995.

⁶⁹ *Statement of the Group of 21 on a Nuclear Test Ban*, June 30, 1995, CD/NTB/WP.248 (CD/1329).

⁷⁰ China, Working Paper, *China's position on CTBT on-site inspections*, CD/NTB/WP.266, September 5, 1995.

⁷¹ Russian Federation, Working Paper, *On-Site Inspections Under a CTBT: The Russian Federation's Approach*, CD/NTB/WP.249, June 30, 1995.

⁷² Munir Akram, September 14, 1995, CD/PV.718.

⁷³ According to one senior British official, interviewed off the record in May 2002, Israel – designated to host IMS stations – chose to feed its ideas or concerns about the IMS direct through the Friend of the Chair, Peter Marshall, "in order to avoid knee jerk Iranian reactions".

⁷⁴ Israel, Working Paper, *On-Site Inspection: Draft Text Covering Some Procedural Elements of OSI*, CD/NTB/WP.132, June 29, 1994; and Israel, Working Paper, *Health & Safety During On-Site Inspection*, CD/NTB/WP.190, December 1, 1994.

⁷⁵ Israel, Working Paper, *Access Regime: Proposed Treaty Language for the Protocol*, CD/NTB/WP.204, December 16, 1994.

⁷⁶ United States of America, Working Paper, "Challenge" *On-Site Inspection Concept*, CD/NTB/WP.90, June 8, 1994.

⁷⁷ Russia suggested excluding certain areas from aerial reconnaissance, or shrouding or removing from the inspected area sensitive installations unconnected with the ambiguous event, as well as closing off particular buildings, structures or premises. Russian Federation, Working Paper, *On-Site Inspections Under a CTBT: The Russian Federation's Approach*, CD/NTB/WP.249, June 30, 1995.

⁷⁸ United States response to questionnaire, informal paper dated March 16, 1994.

⁷⁹ The United States' belief in its NTM capabilities derives from the Pentagon's confidence in having the most advanced intelligence technology and resources, and goes back as far as nuclear arms control. One reason for concluding the PTBT in 1963, rather than a CTBT, was the US view that tests in the atmosphere, outer space and underwater would be easier to detect without any institutionalised or cooperative verification provisions. Such was his confidence in US national intelligence means that when President John F. Kennedy recommended the PTBT to Congress for ratification, he promised: "The risks in clandestine violations under this treaty are far smaller than the risks in unlimited testing... No nation tempted to violate the treaty can be certain that an attempted violation will go undetected, given the many means of detecting nuclear explosions. The risks of detection outweigh the potential gains from violation, and the risk to the United States from such violation is outweighed by the risk of a continued unlimited nuclear arms race". John F. Kennedy, Statement to US Senate when transmitting the 1963 Partial Test Ban Treaty for their advice and consent, quoted in Michael Krepon, *Arms Control, Verification and Compliance*, (New York: Foreign Policy Association, 1984) p 16.

⁸⁰ Sha Zukang, September 5, 1995, CD/PV.717. China, Pakistan and India, in particular, rooted their opposition to NTM in incidents of alleged harassment and accusations on the basis of unconfirmed, unverifiable (or unfalsifiable) intelligence, invariably from the United States. On several occasions, Chinese officials obliquely cited the *Yin He* incident of 1993, when US military personnel, with the assistance of Saudi Arabia, forcibly boarded and detained a Chinese vessel en route to Iran, to search for precursor chemicals for chemical weapon production – which they did not find. The *Yin He* was detained in the Saudi port of Dammam from August 26 to September 4. See *Statement by the Ministry of Foreign Affairs of the People's Republic of China on the 'Yin He' Incident*, dated September 4, 1993 (circulated to the Preparatory Commission for the OPCW, September 25, 1993), <http://www.nti.org/db/china/engdocs/ynhe0993.htm>. See also *Reuters* report, August 25, 1993; and "Inspection of Chinese Cargo Ship Yields No Evidence of Chemicals", *Arms Control Today*, October 1993, p.19. Pakistan's Foreign Minister, Sardar Aseff Ahmad Ali, referred to Pakistan's "historical experience of undue harassment" when he told the CD that information from NTM should not be allowed a role in triggering an OSI, as it could be "subjective, selective and unreliable". See Sardar Aseff Ahmad Ali, Foreign Minister of Pakistan, Statement to the CD, March 28, 1996, CD/PV.733. India also alluded to incidents in which it was accused by media innuendo on the grounds of "leaked" US intelligence sources, without being provided with evidence that could be directly contested. India's complaint was a two-edged sword, as the *New York Times* reports of its test preparations at Rajasthan in late 1995, widely understood to have been deliberately leaked by US intelligence, turned out to have been accurate. For contemporaneous reports of the test preparations and reactions in India, Tim Weiner, "US Suspects India Prepares to Conduct Nuclear Test", *New York Times*, December 15, 1995; C. Raja Mohan, "Ploy to pressure India on CTBT", *The Hindu*, December 17, 1995; Aziz Hanliffa, "N-leak was to trap India into CTBT", *The Hindu*, December 30, 1995. See also News Review compiled by Sean Howard, *Disarmament Diplomacy* 1, January 1996, p 37-38. For the full story, see George Perkovich, *India's Nuclear Bomb*, University of California Press, Berkeley, 1999, pp 353-377. Iranian delegates reiterated their objections to shadowy US intelligence being evoked to deprive Iran of nuclear technology or assistance under Article IV of the NPT, despite its compliance with the basic IAEA safeguards under the NPT's Article III (INFCIRC/153).

⁸¹ Ibid.

⁸² The G-21 argued that "CTBT judgement should be based on data received from the IMS" and that NTM should "not be used on a case-by-case and selective basis". *Statement of the Group of 21 on a Nuclear Test Ban*, June 30, 1995, CD/NTB/WP.248 (CD/1329). See also the statement on behalf of the G-21 made by Satish Chandra, ambassador of India, June 29, 1995, CD/PV.710.

⁸³ The Nuclear Test Ban Committee's mandate's exact wording – "a universal and multilaterally and effectively verifiable comprehensive nuclear test ban treaty" – appears consistent with both these interpretations.

⁸⁴ Ledogar used the phrase frequently during the final stage of the OSI negotiations, and later confirmed this. Interview with Stephen Ledogar, New York, November 5, 2000.

⁸⁵ In effect, France argued that a requested OSI could go ahead on a 'red light' procedure if backed up with IMS data, but that any request based on NTM would have to undergo the more stringent 'green light' process, requiring the positive decision of the Executive Council before it could proceed. French Statement to Working Group 1, August 18, 1995.

⁸⁶ Although kept from CD membership until June 1996 by US opposition to Iraq's inclusion on the 'O'Sullivan list', as discussed in Chapter 2, South Africa's participation in the CTB negotiations had begun to establish its reputation for constructive, disarmament-oriented, regime-strengthening

positions among the nonaligned states. South Africa, Working Paper, *Comprehensive Test Ban Treaty: The International Monitoring System and On-Site Inspections*, CD/NTB/WP.300, February 8, 1996.

⁸⁷ Israel, Working Paper, *Supplementary Monitoring Data from Co-operating National Facilities*, CD/NTM/WP.251, July 6, 1995.

⁸⁸ Sha Zukang, September 5, 1995, CD/PV.717.

⁸⁹ Islamic Republic of Iran, *Draft Comprehensive Test Ban Treaty*, February 21, 1996, CD/1384. In similar ways, Australia's model treaty proposed that an OSI could be based on data from the IMS and/or "other elements of the treaty verification regime... [including] any relevant supplementary data or information". Australia also proposed associated measures promoting access by all states parties to "other technical information and data relevant to the verification of the basic obligations of the treaty". Australia, *Comprehensive Nuclear Test Ban Treaty, Model Treaty Text*, February 29, 1996, CD/1386 and Australia, *Comprehensive Nuclear Test Ban Treaty, Explanatory Notes Accompanying Model Treaty Text*, February 29, 1996, CD/1387.

⁹⁰ Statement by the Chairman of the Ad Hoc Committee on a Nuclear Test Ban, Ambassador Jaap Ramaker of the Netherlands in the Ad Hoc Committee, August 9, 1996.

⁹¹ This early, time-critical phase would consist of visual inspection, overflights and more targeted monitoring. If this inspection failed to clarify the ambiguities, a further, more intrusive inspection would be considered. See Islamic Republic of Iran, *Draft Comprehensive Test Ban Treaty*, February 21, 1996, CD/1384; Australia, *Comprehensive Nuclear Test Ban Treaty, Model Treaty Text*, February 29, 1996, CD/1386 and *Explanatory Notes*, February 29, 1996, CD/1387.

⁹² See Sha Zukang, June 6, 1996, CD/PV.737.

⁹³ Jaap Ramaker, interview with the author, Vienna, July 16, 2001.

⁹⁴ Sha Zukang, June 6, 1996, CD/PV.737.

⁹⁵ Jaap Ramaker, interview with the author, Vienna, July 16, 2001.

⁹⁶ Chairman of the Ad Hoc Committee on a Nuclear Test Ban, *Draft Comprehensive Nuclear Test Ban Treaty*, August 14, 1996, CD/NTB/WP.330/Rev.2

⁹⁷ *Protocol to the Comprehensive Nuclear Test Ban Treaty, Part II, On-Site Inspections*. See Appendix.

⁹⁸ Statement by the Chairman of the Ad Hoc Committee on a Nuclear Test Ban, Ambassador Jaap Ramaker of the Netherlands in the Ad Hoc Committee, August 9, 1996.

⁹⁹ Jaap Ramaker, interview with the author, Vienna, July 16, 2001.

¹⁰⁰ See the discussion on consensual knowledge in Fen Osler Hampson with Michael Hart, *Multilateral Negotiations: Lessons from Arms Control, Trade and the Environment* (Baltimore and London: The Johns Hopkins University Press, 1995), especially pp 37-40. See also Peter Haas' related discussion on shared knowledge and epistemic communities. Peter M. Haas (ed), *Knowledge, Power and International Policy Coordination*, (Columbia, SC: University of South Carolina Press, 1992). During the year before the CTB negotiations formally opened, in 1993, Peter Marshall had begun to hold training seminars in Geneva for CD diplomats and their teams on verification technologies.

¹⁰¹ In the 1960s and 1970s, for example, working from the premise that the primary purpose of verification was "to deter would-be violators" rather than "abstract perfectionism", Sweden had argued variously for an "extended detection club" for a test ban, based on national stations cooperating with rapid data exchange, and for an international verification agency which would incorporate data from various sources, including national or commercial satellites. Myrdal, 1977, p 211 and 310-311. By 1990, VERTIC's proposed verification regime for the CTBT also envisaged the incorporation of data from a growing network of national and primarily civilian satellites, which could at a relatively low cost be equipped with the appropriate sensors and bhangmeters to detect tell-tale nuclear test flashes or EMP. VERTIC, 1990, pp 3.56-3.68. See also Laurence Nardon, *Satellite Detection*, Verification Matters No. 7 (London: VERTIC, November 1994). It should also be noted that in late 1995, Belgium expressed similar scepticism about noble gas monitoring, but was quickly brought back into the fold by its Western allies, who did not want the issue reopened.

¹⁰² For example, Australia gave credibility to the concept of an evolutionary verification system by including it in its draft text as a practical and cost effective approach. *Comprehensive Test Ban Treaty: Australian Resource Paper on Draft Treaty Elements*, CD/NTB/WP.49 and *Explanatory Notes*, CD/NTB/WP.50, March 30, 1994. Australia's position may have been an early attempt to learn from the experience of the CWC negotiations. After "agonising and protracted" negotiations to find a balance between establishing an effective system and "avoiding over-intrusiveness, over-regulation and unnecessary expense", the CWC verification system was described by the final-year Chair of the negotiations, Adolph Ritter von Wagner of Germany, as "flexible and open to future adjustment in the light of practical experience gained". Trevor Findlay commented that though it was a case of "putting

the best face on the inability of the negotiators to agree” such flexibility may come to be seen as a strength in the CWC verification system, and something to be emulated in subsequent treaties. Trevor Findlay, *Peace through Chemistry* (Canberra: Australian National University, 1993) p 29.

¹⁰³ The Blacknest wing of AWE Aldermaston (formerly known as the Atomic Weapons Research Establishment – AWRE) was almost closed down after the conclusion of the CTBT, a victim of success, in the view of one senior official.

Chapter Eight

Entry into Force: Too Rigid, Too Rushed

When India voted against the CTBT when it was adopted by the United Nations General Assembly in September 1996, Ambassador Arundhati Ghose declared: *“India will never sign this unequal Treaty, not now, nor later.”*¹ Characterising the entry into force provision as coercive, she asserted that because of it, the Treaty would never enter into force. Ambassador Ghose’s words have haunted the CTB negotiations ever since.

Ignored for most of the negotiations, entry into force turned into a battleground for the competing objectives of some of the P-5, for whom the chief purpose of the CTBT was to curb the development and spread of nuclear weapons outside the NPT-recognised nuclear weapon states, and India, caught between nationalistic nuclear ambitions and the remnants of its nonaligned, pro-disarmament ideology from the immediate post-colonial time of Gandhi and Nehru.² The desired outcome for entry into force negotiations is a credible payoff between political reassurance and operational viability. Assessing the CTBT from the first six years after the treaty was opened for signature, it is hard to escape the judgment that the negotiators failed to find the right balance. While India’s domestic debate on its nuclear options was undoubtedly a central feature of what went wrong, Chapter 8 is particularly concerned to look at the sources within the EIF negotiating dynamics. How was it that the most reluctant participant in the negotiations was at the end handed the power of veto over the treaty’s legal status and implementation? And what did the UK do to prompt one senior European diplomat to label Article XIV “Britain’s Revenge”?³

The entry into force requirements for a treaty determine the conditions which must be met in order for the agreement to take full legal effect. EIF negotiations aim to set appropriate conditions to give national and international confidence that the agreement will enhance rather than detract from the participants’ security. Entry into force is therefore a mechanism related to reciprocity and implementation. Because it confers authority on the full operation of the verification regime and implementing organisation, compliance and enforcement are closely bound up with it as well.

Where signing and ratifying an agreement formally express the national political will to comply, entry into force gives confidence that a critical mass of others will do likewise. Viewing security as a public good, the greater the number of participants in the regime the greater the benefits for all.

The NNWS and civil society made the mistake of paying scant attention to entry into force until the very last. They were seduced by the past: in most cases, as in the CWC, the entry-into-force provision has fallen into place during the endgame.⁴ By mid-1996, when it was clear that this would not happen, they found themselves unable to influence key states' positions quickly enough to prevent an endgame stand-off. The result was less an agreement than a management compromise rushed through in the belief that the treaty would fail without it. Now the entry into force article looks more like an Achilles heel, an exposed flaw by which its opponents are slowly killing the test ban.

General Considerations for Entry into Force

An EIF article will usually specify that before the treaty takes legal effect it must be ratified by a certain number of states. In addition, the EIF provision will often set a specific period between the treaty being opened for signature and the earliest time it can enter into force, or it may specify a period between the 'triggering' ratification and entry into force. As a state's decisions about whether and when to accede to a treaty may have implications for security, EIF conditions are frequently subject to close political scrutiny during national ratification debates. It is therefore important that EIF provisions give a treaty credibility, without being prohibitively stringent. The simpler the EIF arrangements, the easier it is for the treaty to take effect quickly. An example of this was the PTBT, which took just three months between signature and entry into force, despite having to get a two-thirds majority of the US Senate. Entry into force only required the ratification of the three negotiating parties: (the Soviet Union, the United Kingdom and the United States). At the time, these three had reason to worry about France, China and several other proliferant states. They opened the PTBT to all states to join, but chose not to make its entry into force contingent on the accession of any specific additional states.⁵ Indeed, China and France have never acceded to the PTBT, and yet France ceased atmospheric testing after Australia and New Zealand sought redress for contamination of the Pacific in the International

Court of Justice in 1973. In so doing, they also made the argument that the PTBT had been so widely accepted and adhered to that it had established a norm, effectively becoming part of the body of law applicable to all, and therefore applicable to France, regardless of whether France had itself signed.⁶

The NPT and CWC are both successful examples of multilateral arms control treaties that set the bar low enough to be able to enter into force without undue delay, and which fulfilled their negotiators' hope that numbers would build incrementally. Such approaches rely on political pressure on hold-outs to intensify as the principles and norms in the treaty become embedded in international expectations. The NPT required ratification by the three depositary NWS, (the Soviet Union, the United Kingdom and the United States) plus 40 others, unspecified.⁷ Concluded in 1968, the NPT entered into force on March 5, 1970, and by time of writing had 188 states parties. The CWC, which opened for signature in January 1993, specified only that it would enter into force 180 days after the deposit of the 65th instrument of ratification.⁸ Though no-one was specified, it was recognised that entry into force without certain parties would make enforcement difficult, so there were substantial incentives for original signatories. Fearing that the United States would be excluded from important posts and decisionmaking if the CWC entered into force without it, the Clinton administration pulled all its political stops out to get CWC ratification past Republican obstacles before the treaty entered into force on April 29, 1997. The United States managed to squeeze in under the wire with only 5 days to go, illustrating that flexible EIF provisions may actually provide more incentives and political pressure to accelerate ratifications than overly rigid provisions.

Although it has failed to bring in India, Israel and Pakistan, the NPT has over the years built a nonproliferation regime strong enough to convince many others that their security would be better served as NNWS than by pursuing their own nuclear weapon ambitions. Hence, the regime has strengthened as it has grown.⁹ If instead of its rather flexible EIF provision, Article IX of the NPT had specified a list of all states with nuclear capabilities, as CTBT entry into force requires, it is unlikely the NPT would ever have taken effect. Trying to build a nonproliferation regime on a lame-duck NPT would never have worked as well as legally enforcing the treaty early and then building up membership through a mix of pressure and incentives. In view of the

effective examples of flexible EIF provisions in the NPT and the CWC, why and how did the CD come to impose an entry into force provision so tight and rigid that it is already strangling the newborn treaty?

Marking out the Territory

The basic positions on entry into force were drawn early on in the CTB negotiations. The 1993 Swedish draft treaty took an approach similar to the NPT, proposing ratification by 40 countries, including the five declared NWS.¹⁰ This pragmatic baseline found many supporters among the pragmatic NNWS. Australia led those who advocated a simple number, as in the CWC, taking the view that this would be in keeping with the multilateral and nondiscriminatory intentions of the negotiations; and would prevent the treaty being held hostage to the politics of any individual NWS. Supporters of this position reasoned that international and regional pressure could be exerted to encourage recalcitrant states to ratify. Consistent with the Swedish draft, the United States held that a minimum condition must be ratification by the five NWS. By contrast, the opening positions put forward by Britain, France, Russia and, later, China, were designed to ensure that ratification by the D-3 would be as basic a condition as ratification by the P-5. Acknowledging that most other states favoured the CWC model, Sir Michael Weston epitomised the reasoning of the 'Group of Four' NWS, when he argued that "adopting this formula would provide no guarantee of adherence by all – or indeed any – of the countries whose commitment to the treaty we would regard as necessary if it is to play the non-proliferation role we want from it."¹¹ This view flew in the face of past experience, especially with the NPT.

In deference to widespread political sensitivities about not according the D-3 any special status that might be interpreted as recognition of nuclear weapon status, Russia proposed ratification by around 65 states, including all that possess nuclear reactors or nuclear research programmes on the date of the treaty's signature.¹² With the same intention but a different proposal, the UK proposed that "at a minimum, all members of the CD should ratify the Treaty before it enters into force". By way of explanation, Weston smoothly argued that "[G]iven that we proceed in this forum by consensus, it is surely not unreasonable to expect that a Treaty whose terms we have all been prepared to agree should be ratified by all without undue delay."¹³ Sharing

the UK's expectation of the imminent expansion of the CD to 60, giving membership for the first time to Israel, Iraq and North Korea (India and Pakistan were already members), France adopted the same position; then, as the CD became deadlocked over enlargement, both delegations shifted during 1994 towards the Russian position.¹⁴

The first 30 months of EIF negotiations did little more than identify the basic options. In an early working paper from Working Group 2 on signature, ratification, accession, and entry into force, the Friend of the Chair, Alessandro Vattani of Italy, stated the obvious when he identified the options: "Should the treaty enter into force (immediately, x-days) after the deposit of instruments of ratification by: (a) five nuclear weapon states; (b) five nuclear weapon states and all nuclear capable states; (c) all members of the Conference on Disarmament (d) all members of the Conference on Disarmament after expansion; (e) all States (or 95% of those) possessing nuclear reactors or nuclear research programmes; (f) a fixed number of States (e.g. 40 or 65, including five nuclear weapon States or including members of the CD); (g) along the lines of the provisions of the Treaty of Tlatelolco; (h) a significant number of key states; (i) other?"¹⁵ Later Friends of the Chair failed to take the issue much further than this comprehensive but unilluminating list of possibilities.

Stringent Conditions and Bypass Mechanisms

In essence, the choice at the end of 1994 was perceived to be between a particular list, a set number or a formula. By the end of 1995, the nature and limitations of all the options had been exhaustively explored, but the negotiators were still far from any convergence of views. Those who wanted to ensure early entry into force still preferred to replicate the CWC approach, based on a simple number, such as 60. Britain, Russia and France adhered to their advocacy of an IAEA-based list containing all states capable of nuclear testing. Sharing this stringent position, China hedged its bets by combining the CD and IAEA lists, proposing that the treaty could enter into force one year after "ratification by all States that were members of the Conference on Disarmament at the time when the Treaty was opened for signature and by all States known by the International Atomic Energy Agency to possess nuclear capabilities (i.e. to possess nuclear power stations or nuclear reactors)".¹⁶

The United States continued to favour the CWC approach, provided the NWS were explicitly included. While taking the view that making entry into force conditional upon ratification by a specific list could render it too difficult to achieve, the US also recognised that its P-5 colleagues were very determined to achieve a stringent criterion, and therefore its delegation tried suggesting two different options for moving beyond a deadlock. In the first, entry into force would be enabled if a high percentage (95%) of listed states had ratified. In the second, providing that the P-5 were among the ratifiers, the United States suggested that a “waiver conference” could be held if the treaty had not entered into force two years after signature. According to this scenario, the conference participants, or at least all participants that had ratified the treaty, could then decide whether to waive the specific EIF requirements, and, in effect, behave as if the treaty had entered into force. This would enable them to establish the verification regime and implementing organisation. US delegation members also argued that the conference could be a useful mechanism to apply pressure on non-ratifying states, threatening them with loss of influence and appointments in the establishment of the implementing organisation.¹⁷

Many delegations found the waiver conference idea interesting in principle but few supported the US requirement that all five NWS must ratify before such a mechanism could be invoked. They argued that by making ratification by the P-5 a condition before even the waiver conference could be invoked, the United States was discriminating in favour of the NWS, giving them a risky opportunity for veto. China, for its part, considered the US proposal “a kind of political discrimination against the five nuclear weapon states”.¹⁸ For some negotiators, China’s opposition compounded their concerns that Beijing intended to keep on with its nuclear test programme until the CTBT had fully entered into force. Such concerns had been provoked by Sha’s assertion that “once a CTBT has entered into force, [China] will cease nuclear testing”.¹⁹

Australia, which stated that it preferred the concept of a simple list combined with political pressure to ensure that key states would accede, also proposed an alternative approach, based on the waiver provision in the 1967 Treaty of Tlatelolco, which established a nuclear weapon free zone in Latin America and the Caribbean. This innovative waiver provision is credited with successfully preventing the Tlatelolco

Treaty being held hostage by the domestic or national considerations of any state or states in the Latin American region, while enabling governments to take account of regional rivalries and shifts and choose a time appropriate to their own security assessments.²⁰ Australia's proposal was to list the specific states deemed essential, but with each ratifying state having the right to waive the requirements and allow the treaty's provisions to become legally binding for them. A number of delegations considered such an arrangement to be impractical for the CTBT, pointing out that although the Tlatelolco Treaty implementing organisation, OPANAL, was established by acceding states, verification was by bilateral arrangements with the IAEA. They objected that Tlatelolco's ingenious mechanism, which has not been tried in any other treaty arrangement, would not work for the CTBT, where the core of the verification regime was to be an international monitoring system.

Australia envisaged that unless some mechanism were worked out for a sufficient number of states to inaugurate the multilateral verification system, implementation pending full entry into force would be based on national monitoring. The objections to such a possibility, deemed by some nonaligned states to be a recipe for undermining the rationale for a multilateral CTBT, proved to be too strong for the proposal to survive very far into 1996.²¹ Australia soon tried again, reviving the US idea of a "waiver conference" in the model treaty it tabled in February 1996.²² Curiously, Iran, which had tabled a draft treaty text a week earlier, modified another US suggestion for its EIF provision.²³ Although the particular solutions they proposed were different, the Iranian and Australian drafts surprised many with their similarity of approach on EIF, with both combining a list with a veto-avoiding mechanism. Nevertheless, there was criticism of the Australians for basing EIF on the concept of an expanded CD, since that proposal had been dropped from the rolling text, while others complained that Iran's proposal could result in implementation of the treaty without three out of the eight target states. Though both drafts were welcomed, they did not advance the EIF debate significantly.

Battle is Joined between the P-5 and D-3

By the time the Australian and Iranian drafts were attempting to find workable compromises, the political struggle between the P-5 and D-3 underlying the EIF negotiations had fully surfaced. In January 1996, India introduced a qualitatively

different variable, relating entry into force to nuclear disarmament: "...this Treaty shall enter into force only after all states parties have committed themselves to the attainment of the goal of total elimination of all nuclear weapons within a well defined time framework (of ten years)."²⁴ As discussed in chapter 5, this was one of three substantive proposals tabled by India at that time, covering the preamble, review and entry into force. These working papers were seen as the first clear indications from India of the direction its domestic debate on nuclear policy and options was taking. While some of India's previous proposals had been sufficiently practical to be a possible basis for negotiations, the linkage of entry into force with nuclear disarmament was viewed with grave consternation by advocates of the test ban, however much they also desired disarmament, and with cynicism from the P-5. Most significantly, the linkage was symptomatic of India's apparently painful realisation that this time the test ban negotiations were likely to conclude with a treaty, and that it would soon be necessary for India to take a decision beyond traditional rhetoric.

The Indian proposals were tabled soon after Prime Minister Narasimha Rao cancelled the nuclear test preparations reportedly leaked by US intelligence sources to the *New York Times*. The *New York Times* report unleashed a turbulent domestic and media debate in India about national interests and the CTBT, in which those linking retention of the nuclear option with independence, status and future security (not to mention virility) were in the unmistakable majority.²⁵ New Delhi undoubtedly calculated that an explicit link between the CTBT and a ten year target date for nuclear disarmament would be popular with the public and dismissed by the NWS. Although Indian diplomats insisted that their proposals and target dates were negotiable, it appeared to many negotiators that, in mounting its challenge in this way, India was deliberately manufacturing conditions of disappointment to prepare the ground for a best-versus-good rejection of the treaty later on.

In March 1996, the UK delegation, which was the most vocal of the P-5 proponents of a stringent EIF provision, decided to sharpen the debate and cut through the euphemistic role of lists such as the IAEA or the expanded CD by floating a 'non-proposal' aimed solely at the P-5 plus D-3. The UK's informal suggestion was to specify states on the IAEA list "not under a legally binding treaty obligation not to manufacture or acquire nuclear weapons".²⁶ Such a formula covered all countries

with unsafeguarded nuclear facilities and excluded the non nuclear weapon parties to the NPT or to regional NWFZ treaties (Brazil, for example, had not at the time acceded to the NPT, but was party to the Tlatelolco Treaty). Although the British delegation never formally put the proposal, which was disliked by many, it was put into the rolling text by Pakistan. Pakistan's eager adoption of the formula had not been anticipated, but it caused little surprise, and was generally viewed as just another tactic by Pakistan in its diplomatic judo with India.

Of course it had long been clear to everyone that the purpose of the CTBT was to prevent nuclear testing by the P-5 and the D-3, since other states, including Iraq and DPRK, were already covered through their NPT obligations. But Britain's suggestion, which forced into the open the subtext underlying the lists, did not merely evoke criticism; it caused considerable dismay on all sides. Some NNWS argued that it placed an undesirable power of veto in the hands of the targeted states. Others feared that linking the D-3 with the P-5 directly would confer special status on India, Israel and Pakistan. For Japan and South Africa, the issue was legitimization of the D-3 through the back door: they feared that putting what amounted to a new definition into the CTBT, a later treaty than the NPT, would set a precedent and undermine the nonproliferation regime's demarcation between NWS and NNWS. More particularly, Egypt and some of the other Arab states were determined to allow nothing that could be construed as legitimation of Israel's nuclear status as they continued to push for it to join the NPT as a NNWS. By contrast, despite insisting on a provision that would bind the D-3, some of the NWS were hypersensitive opponents of associating the non-NPT nuclear weapon possessors too directly with the NWS, not only for fear of undermining the NPT, but because the linkage could erode the special status they themselves enjoyed in the nuclear club.²⁷

For those less worried about the risk of setting a precedent that might undermine the NPT, the British suggestion was thought capable of getting round India's objections to the wider list, as it provided the attractive payoff for India of appearing to recognise the nuclear weapon status of the D-3, something that India had long sought. A few even harboured the hope that it offered a way for Islamabad to sign and ratify the CTBT, secure in the knowledge that it would not take legal effect without India's accession as well. But India, it soon transpired, was not interested in this kind of

payoff of status-by-association. India, Israel and China all objected that the formula singled them out. India and China claimed it violated the principle of nondiscrimination. Israel, which was prepared to accept its inclusion in a list of over 40 nuclear capable states, feared that a narrower P-5 plus D-3 provision would have the effect of withdrawing its politically convenient cloak of opacity, and might expose it to even more pressure from NPT states parties in the Middle East.

By this time, the CD had wakened to the realisation that the political problems between the P-5 and the D-3 (and Israel and its Middle East neighbours) could make compromise on entry into force very difficult to achieve. In this context, Austria drew attention to a proposal on provisional application that it had originally tabled in June 1995, but which had received scant attention at the time. After updating it in February 1996, Austria found more states willing to listen to its argument for a conference to be convened by all states that had ratified, if the treaty has not entered into force two years after the date of deposit of the first instrument of ratification. These states could then decide (by a process to be determined) to let the treaty, or parts of it, be applied provisionally.²⁸ Under provisional application, the states agreeing to be covered by the treaty would decide among themselves about verification and financing. In the event of incomplete accession, provisional application would thus enable the international verification system and implementing organisation to be inaugurated, with special financial arrangements agreed among the states concerned.

Austria's proposal represented a different approach from waiver options because it was based on collective decisionmaking among states which had ratified, rather than individual waivers. It therefore could potentially bypass the verification question, since the participating states could institute some if not all components of the multilateral verification system and would not necessarily have to rely solely on national technical means. The United States, among others, regarded it as an inadequate and even dangerous solution; since provisional application lacked full legal force it would not be able legally or satisfactorily to address a suspected violation (or initiate any kind of on-site inspection) without the cooperation of the suspect, which was unlikely to be given. There was also a question about the legal standing of decisions and the status of those states which, having themselves ratified, were in the minority that voted against provisional application: would they be

permitted to hold aloof from the provisional organisation or would they be bound by the majority decision? This question had the situation of Pakistan or some of the Middle East countries in mind, though they did not openly raise it themselves.

Attempts to Manage the Conflict

As discussed earlier, Jaap Ramaker presented his first Chair's draft treaty text on May 28, 1996. After an inconclusive meeting on entry into force on May 23, which demonstrated the lack of a front-running option, and under severe pressure from Britain and Russia, Ramaker adopted at the last minute another British suggestion that had never been formally proposed. Still seeking a formula to accomplish the UK's apparently paramount purpose of binding the P-5 and D-3, Sir Michael Weston suggested listing the 37 states which hosted either a primary seismic station or a radionuclide laboratory as part of the international monitoring system. The UK's reasoning was similar to its argument for preferring the expanded CD to the IAEA list: as the agreement to host a component of the verification system could be construed as a form of commitment, listing the same states for EIF requirements appeared to be a logical extension.²⁹

How Ramaker came to put such a controversial proposal into his first Chair's draft without wider consultation is more difficult to understand. Clearly he was up against the clock and under heavy pressure from Russia and Britain, knowing also that several other states, notably China, Pakistan and Egypt wanted to bind the D-3 into the EIF provision as tightly as possible. On the other hand, the waiver options put forward by the United States and canvassed in the Australian and Iranian drafts had received much wider support, and the majority of CD members were expecting the final outcome along the lines of a list plus waiver combination. According to senior Dutch officials, Berdennikov had deployed the hostage tactic and made very convincing threats that Russia would not accept any Chair's text as the basis for further negotiations unless it contained a stringent EIF provision. Ramaker believed him and feared that if the Chair's text were rejected as a whole by any of the P-5, the negotiations would go "back to square one".³⁰ It later transpired that Ramaker had deliberately chosen the British formula for his first draft because it had never been part of the rolling text or any formal proposal, and so would not suffer from "ownership" or "turf" difficulties. He meant it to be a 'holding article' and hoped that

it would galvanise the negotiators into renewed determination to find a workable compromise.³¹

Instead, the formula was condemned by many CD members, who complained that it opened the practical, scientific decision about where to locate IMS stations to legal-political disputes about entry into force. They worried about the effect of such linkage on the verification system, which had been close to agreement. Advocates of a more flexible EIF provision were also concerned that it placed inappropriate leverage and potential delaying power in the hands of certain states, a problem common to all the lists under consideration. Though behind the scenes Ramaker stressed that he was not committed to this provision, and that the purpose of his draft was to “test the waters”,³² his public message was rather different. Acknowledging that there was no “magic formula” and that the provision linking entry into force with states responsible for IMS facilities had met with some criticism, Ramaker insisted that “a number of delegations expressed an interest in this formula, and indeed it seems to indicate the way forward”.³³ Whether at the time he really considered this could provide the solution or, as claimed, he put the British formula in as a holding position in the hope of forcing delegations to negotiate something more practical, Ramaker became trapped when Berdennikov declared that he was satisfied with the stringent entry into force in Article XIV and regarded it as final. China and Pakistan speedily and directly endorsed this draft Article XIV, further reducing the Chair’s room to manoeuvre. The British formula backfired even more spectacularly when India retaliated by withdrawing all its facilities from the IMS.³⁴ A formula based on the argument that participating in the verification system was tantamount to commitment to the treaty thus had the malign (and foreseeable, though apparently unforeseen) consequence of pushing India out of the kind of cooperative association with the treaty that could, over time, have been a lever for building confidence and bringing India on board the treaty as a whole. Although based on a British formula, UK scientists who had devoted much time and energy to ensuring that the IMS was representative and provided effective global coverage were furious with this outcome, but powerless.

The die was now cast. In withdrawing its stations from the IMS, India had severed all cooperative links with the CTBT, nullifying any lingering hope that its participation

in the negotiations would bind it to the outcome. India's proposals linking entry into force with nuclear disarmament had been ignored in large part because even the G-21 were sceptical of New Delhi's motives. On May 16, 1996, Atal Bihari Vajpayee became Prime Minister of a coalition led by the BJP, but for only 12 days. It later emerged that, on taking power, Vajpayee had immediately authorised the weaponeers to proceed with the nuclear tests called off earlier by Rao, but before they could be conducted he lost a vote of confidence and had to concede power to a different coalition. The scientists continued their demand for tests and even placed a nuclear device in a test shaft at Pokhran. The new Prime Minister, H.D. Deve Gowda, neither permitted nor rejected their demands, "but instead sought to delay a decision while the government attended to more pressing domestic matters".³⁵

India, meanwhile, ratcheted up its demand that the CTBT must not enter into force without a timetable for nuclear disarmament accepted by all states parties. Whether a tactic or not, the linkage had the consequence of the P-5 ignoring the rest of India's demands – and also the G-21's attempts to negotiate for stronger language on disarmament and the prevention of qualitative improvements to nuclear weapons. It came as little surprise, therefore, that as the negotiations reached their endgame in June 1996, Arundhati Ghose declared that the treaty was inadequate: "India cannot accept any restraints on its capability if other countries remain unwilling to accept the obligation to eliminate their nuclear weapons".³⁶ Having indicated that it would not sign the treaty, India redoubled its objections to being named as one of the countries responsible for whether or not the CTBT could enter into force.

In Geneva, belated recognition began to dawn that the EIF negotiations carried serious risks for the treaty. Antonio de Icaza of Mexico had been appointed EIF Friend of the Chair for 1996, and then "moderator", but Ramaker was increasingly taking negotiations into his own hands. In a fraught atmosphere, assailed by a number of competing demands and different states' priorities, Ramaker and the Dutch delegation were run ragged as they tried to work out the details of possible compromises. Among the P-5, Russia, China and the UK continued to insist that the treaty must unequivocally bind the nuclear capable states as well as the P-5. They appeared willing to take the treaty hostage on this issue, so the pressure on Ramaker to meet their demands was heavy.

But was entry into force a real treaty-breaker, meaning that without a binding “P-5 plus D-3” condition Britain, China and Russia would defect from the agreement and refuse to sign, or were the three delegations just playing a very tough tactical game, expecting their price to be knocked down to something more reasonable? China’s concerns were international and regional: it wanted to be counted among the P-5, but didn’t want India either to be accorded the same status or allowed to become a serious nuclear competitor in the future. The United States took China’s position on EIF seriously.³⁷ Sha Zukang has confirmed that binding the D-3 was an important objective for China, but he never referred to this as a “make or break” or “treaty-breaking” issue, and it did not appear to be on a policy par with on-site inspections or even PNE, on which, as discussed in chapter 6, Beijing ended up making very important concessions.³⁸

Russia’s motives for insisting on the adherence of the D-3 as a condition were less obvious. In the PTBT, NPT and CWC negotiations, the Soviet Union (and Russia, after 1991) had recognised the benefits of facilitating early entry into force rather than requiring prior adherence from all states of concern, and had subsequently witnessed how states which did not immediately accede became drawn into compliance with a regime’s norms and principles once the treaty had taken effect. The institutional process of incremental build-up had proved successful for the NPT and PTBT, and by 1996, progress on the CWC was looking positive. Moreover, it was hardly plausible that Russia feared that India would constitute a significant national security threat if it stayed outside the CTBT (as opposed to being a continued thorn in the flesh of the nonproliferation regime). The strength of Russia’s obduracy appeared to derive from its view that the CTBT’s chief function was as a mechanism to pull the D-3 into legal obligations with regard to nuclear weapons, especially given that they were unlikely to accede to the NPT in the near future. Establishing a nondiscriminatory regime against testing was therefore treated as subordinate to universalisation of the discriminatory nonproliferation regime.

Although China and Russia were clearly in favour of a stringent EIF provision, both had engaged actively in concession-trading on other issues, notably the verification regime and CTBT Organisation. By 1996, both China and Russia appeared to be on

board the treaty, as signified by China's virtual surrender on PNE and Russia's grudging acceptance of the zero yield scope. In light of such political developments, Berdennikov's continued assertion that Russia could not have compromised on EIF³⁹ are open to question. Further doubt has been cast by a former US official's recollection of a Russian memo sent direct to Washington from Moscow at the height of the impasse over entry into force. Reportedly, Moscow proposed that if the CD could not finalise the CTBT by September 1996, the P-5 should conclude among themselves, sign the treaty, and then open it to other states, as had been done with the PTBT. Washington, determined that the CTBT should be multilateral, did nothing with the Russian suggestion, which dropped out of sight.⁴⁰ Since few if any of the Geneva negotiators heard of such a memo, it did not influence the negotiations at the time, but the significance of Moscow's communication is that it indicates that Russia may well have been prepared to join a treaty that included only the P-5. It is clear that Berdennikov considered himself to be under instructions to negotiate aggressively for a stringent P-5+D-3 provision, but if Moscow sent this parallel memo to Washington it implies that Russia would not have actually rejected the first Chair's draft or wrecked the negotiations as long as the EIF provision ensured accession by the P-5. Had Ramaker known that Moscow's bottom line was P-5 adherence rather than the full P-5 + D-3 condition, he may have been less intimidated by Berdennikov's hostage-threatening tactic, and could thus have risked a more practical provision in the May 28 draft.

Russia was not Ramaker's only problem, however, for he also had to contend with an unusually vocal and hardline British posture. While it was clear that the Conservative government wished to portray the CTBT as pre-eminently an instrument of nonproliferation, the stridency of the British position baffled delegations and NGOs in Geneva, London and Washington, particularly after France had moved closer to the US position. Weston has subsequently expressed immense pride in keeping the UK delegation consistent with the initial principles it laid down for the CTBT, and it is true that he refused to yield on the British demand for a rigid, list-based provision since his opening policy statement in January 1994.⁴¹ In view of the uncompromising rigidity of the UK's EIF position, and unable to see a significant security threat to Britain if India, Pakistan or Israel failed to accede to the treaty immediately, other delegations wondered about more personalised, political or grudge-bearing

motivations. Some speculated that Britain could be using this issue to get back at the United States, a possibility consistent with evidence that the UK MoD was more determined to hold on to the position than the FCO.⁴² At one point Weston explained his position as being necessary to obtain Pakistan's accession: contrary to the main evidence from the NPT and PTBT experiences with states that were still considering their nuclear options, he expressed confidence that a strict mechanism would bring Pakistan on board and completely isolate India, and that this would then be more successful in bringing India on board than a flexible approach that was not legally binding.⁴³

France's opening position on entry into force in 1994 had been identical to Britain's, but during 1996 it moved towards American flexibility. This French willingness to compromise was consistent with its overall shift in posture following Chirac's election and the decision to resume testing. Having achieved its desired delay, Paris ceased to be the most openly obstructionist of the P-5 after June 1995. However, due to a change of French ambassador at the end of August 1995, the more constructive French posture was offset by its weaker position within the P-5.⁴⁴

Most middle NNWS, notably Japan, Australia, Germany and most of the EU, Mexico, Canada and the Netherlands (notwithstanding Ramaker's position as Chair), preferred a more flexible EIF approach, but they were slow to recognise how close this issue would come to breaking the treaty. The G-21 was divided, with the Arab states generally advocating a P-5 + D-3 provision to bind Israel, and the rest preferring something more flexible. Several delegations began to float ideas whereby states particularly concerned by certain others (e.g. the P-5 with respect to each other, Pakistan with respect to India, Egypt with respect to Israel) could coordinate their accession with that of another state. One suggestion was for certain states to attach to their own ratification an EIF condition that the treaty would not be deemed legally binding on them unless State A had also ratified. Such conditions are sometimes attached to ratification legislation at the behest of national legislatures⁴⁵ but not usually incorporated into a treaty itself. In the event, none of these suggestions was turned into a formal proposal.

Though the EIF issue had been virtually ignored by NGOs, some were now sounding the alert about the dangers inherent in an overly rigid provision. In response to my Geneva reports, George Perkovich, a well-respected US analyst of South Asia's nuclear politics, circulated a memo to "Parties concerned about the CTBT" in early June. Perkovich's analysis directly contradicted Weston's, as he noted that "putting India in a make-or-break EIF position would create a hot-button political issue in India... no matter how this or any other scenario played out, it's hard to see any positive aspect to having Indian accession required for EIF, once you accept that Indian signature on the treaty is unlikely." Given the turbulence and fluidity of Indian politics at the time, Perkovich urged that "the best politically feasible outcome would be for the treaty to move enough in India's direction that Indian leaders would not foreclose future signature, and that diplomacy and international developments over the next months and years evolve to the point where India can be persuaded to sign, perhaps with additional inducements... If Indian accession is unlikely, then making EIF contingent upon this accession is self defeating."⁴⁶ On the basis of such advice, several NGOs, including Acronym, VERTIC, the Campaign for the NPT (which had morphed into the Working Group on the CTBT), and the Stimson Center, coordinated NGO letter writing to key governments and Geneva delegations. Pressure was also exerted through letters and questions to MPs and Congressional representatives. Their objective was to focus political attention on finding a regime-enhancing resolution to the EIF dilemma, which necessitated high level pressure on the Clinton administration, which still did not seem very seized of this issue, and some kind of parliamentary or FCO intervention to make Britain take a more flexible and constructive stance. Though these civil society endeavours bore some fruit, as discussed below, they were too late to influence the outcome.

The June 20 Watershed

Amid deteriorating personal and political relations among some of the key delegations, matters came to a head on June 20, 1996. Handing over as "moderator" on entry into force, the Mexican ambassador Antonio de Icaza referred to the many letters from NGOs, expressing their concerns that what was called "the eight condition" could be discriminatory and result in "excessive delay". In his national capacity, de Icaza said that he fully shared the NGOs' concerns and favoured an EIF

solution that “endows the treaty with credibility...such as a list combined with a waiver”.⁴⁷

It was not to be. At the CD plenary on the same day, Arundhati Ghose castigated the NWS for shaping the treaty to their technological preferences. In what was interpreted by many as an ultimatum, Ghose declared: “India cannot accept any restraints on its capability if other countries remain unwilling to accept the obligation to eliminate their nuclear weapons”. She rejected attempts to coerce India through the EIF provisions of the treaty, saying that India “would not accept any language in the treaty text which would affect our sovereign right to decide, in the light of our supreme national interest, whether we should or should not accede to such a treaty.”⁴⁸

Also on June 20, but in the NTB Committee that followed the plenary, Ramaker tabled a Chair’s working paper on entry into force. His proposal contained a series of staggered provisions. The first and main condition was accession by all states with a primary seismic station or radionuclide laboratory, as in the May 28 draft. If this strict requirement was not met within five years, then states that had ratified would have a second chance to bring the treaty into effect by a combination of a simple number, waiver conference and a “deferment” option. If at least 75 states had signed and ratified, then the treaty would enter into force automatically five years plus 180 days from the date of its opening for signature, unless one or more of them requested a special conference to be convened. If a conference were requested, then this would be open to all states which had ratified. They would have the power to agree to implement the treaty by a two-thirds majority.⁴⁹ Responding to concerns put forward by Pakistan and Egypt, Ramaker’s working paper proposed that any state which had ratified but did not support the decision to implement the treaty could, at the time of the conference, defer its own accession to the treaty until all the original conditions had been met, or until it felt able to revoke its decision to defer (a kind of reverse Tlatelolco mechanism).

The formula was ingenious and potentially workable, but it suffered from three major problems: it was too late, too complicated, and reproduced the discredited IMS-based list, from which India had already withdrawn. Despite its complexity, a modified version of such a phased entry into force proposal could possibly have won through

even if this overly complicated text had been inserted into Ramaker's May 28 draft. That would have given the phased concept greater authority, while allowing for discussion of the details. It might also have been taken more seriously if it had used as its base-line the IAEA list or newly expanded CD.⁵⁰ As it was, the tactics and timing were wrong. Russia and Britain rejected it out of hand and, despite the valiant attempts of NGOs and the Dutch delegation, even the supporters of flexible entry into force did not take it seriously.

The NTB Committee made one last attempt to find a compromise, meeting until midnight on June 20. As noted in Chapter 5, the notorious exchange between Weston and Ghose occurred early on: Sir Michael's comment about India "wriggling on the end of a hook" provoked an acerbic response from Ghose to the effect that India was no longer a colony and could not be bullied. According to diplomats in the room at the time, the exchange poisoned the atmosphere of the meeting, and no-one wanted to speak after that.⁵¹ Chairing the meeting in his last act as moderator, De Icaza tried to move on and get the Committee to discuss Ramaker's paper, but got little response from the stunned room of diplomats. He mistakenly interpreted the silence as a lack of support for the phased EIF concept. As the delegates stewed in summer heat and the acrimonious atmosphere, De Icaza then attempted to jumpstart discussion by going round the room and asking each delegation to say whether it could accept the EIF formulation in the May 28 Chair's draft. This proved to be a tactical error, as his question was understood by delegations in the narrowest of terms: not "does your country accept this as the best formula for the treaty?" but rather "do you have national instructions to reject it?" On that basis, only India rejected it, although a number of others commented that they would have preferred something more flexible.

Many diplomats recall the June 20 meeting as the day entry into force was lost. Though it was widely speculated that India had already taken its decision to walk away from the treaty and that changing Article XIV would not make much difference at this point, a number of diplomats present blamed Weston's "blast" for the final breakdown in communication with India.⁵² Be that as it may, it is important to note that Weston was accompanied on June 20 by Roland Smith, a senior FCO official

from London, and that most of his remarks that day were not off-the-cuff comments (as many assumed at the time), but read from a written statement.⁵³

Confusion and Haste

Ramaker's hope of being given the authority to find a suitable alternative were effectively killed on June 20, but he continued to try. With time running out, many returned to the view that listing the members of the newly expanded CD, combined with a waiver provision, could facilitate wide adherence and early implementation and also exert pressure on the nuclear test capable states. But the United States reportedly considered 60 too large, and Britain, Russia and China continued to oppose any kind of waiver. Ramaker resurrected an idea originally floated some months previously by Canada for a "political conference" that would be held by signatories after some years if the treaty had not entered into force, and which could discuss ways to persuade hold-out states to accede. It was envisaged that this would be less formal, with fewer decisionmaking powers than a waiver conference.

During the final weeks of June, and particularly after the June 20 meeting, several attempts were made to influence the EIF decision, but they turned out to be insufficient or too late. On June 24, in response to British NGOs, Robin Cook, Labour's Shadow Foreign Secretary, put down a series of five questions for the government on CTBT entry into force, calling for a response to Ramaker's EIF working paper⁵⁴ and asking about the "implications for international security of a lengthy delay in the entry into force" of the CTBT.⁵⁵ The government's reply, given by David Davis, FCO Minister of State, was: "Her Majesty's Government's position is that, for it to be a fully effective non-proliferation measure, the comprehensive test ban treaty must have as parties the declared nuclear weapon states and all other states with a nuclear capability and which are not otherwise prevented from testing by other international agreements to which they are parties. The formula proposed by Ambassador Ramaker on 20 June, but not incorporated into his revised text, does not meet this requirement."⁵⁶ Dodging the central challenge implied in Cook's questions, Davis also intoned: "We believe that the earliest practicable entry into force of the treaty on the basis of universal adherence would best serve the interests of international security."⁵⁷

Michael Krepon of the Henry L. Stimson Center had been trying for months to get a high level group of scientists and former diplomats together (as he had done on the issue of scope a year earlier) to convince the White House to exert its political authority to get a more credible EIF provision. Finally, on June 28, a delegation including the Chair of the JASON Group Sidney Drell, Carter's former Secretary of State Cyrus Vance, General Andrew Goodpaster and McGeorge Bundy, visited the White House and obtained a promise that Clinton would try to get a more flexible entry into force provision.⁵⁸ Letters were also sent to Malcolm Rifkind, the Conservative Secretary of State for Foreign and Commonwealth Affairs, from the Foreign Ministers of several EU and Commonwealth states, including the Netherlands.⁵⁹ Joëlle Bourgois was also seeking ways to exert pressure on Britain to modify its posture. Whether because of French efforts, or following the high level meeting at the White House, Sir Michael Weston received a telephone call from British government representatives attending the meeting of G-7 heads of state in Lyon, June 27-29, 1996, instructing him to show more flexibility on entry into force.⁶⁰ Although it is understood that the change in instructions occurred as a direct result of discussions between President Clinton and John Major, it arrived too late to have any effect (according to Sir Michael).⁶¹

Ramaker put his 'final' treaty text on the table on June 28. He had replaced the discredited IMS-based list in Article XIV with a version that combined the IAEA list of nuclear capable states and members of the enlarged CD, from which India could not simply withdraw. He combined the list with an amalgam of the suggestions from Canada and Austria regarding provisional application and a political conference. In an instance perhaps of the right hand not knowing what the left was doing, the US State Department rallied support for the June 28 draft as a package deal, arguing that it should now be agreed without further negotiations. While it was useful to signal a close to the negotiations as a whole at this time, this added unnecessary weight against reopening Article XIV, and so negated any effect that might have attached to Clinton's "Lyon" action on behalf of a flexible EIF provision. It also made the US insistence on reopening the text to reflect concessions made to China on OSI look like hypocrisy. Such confused responses also reinforced the impression that the United States did not have its eye properly on the EIF ball.

The new Article XIV in the revised Chair's text set a primary condition of ratification by a list of 44 states which were *participating* members of the CD on June 18 (after expansion) and appeared in the 1995 and 1996 IAEA lists of countries with nuclear research or nuclear power reactors respectively. Contained in Annex 2 of the treaty, the wording carefully excludes Yugoslavia (a CD member by name but barred from participation during its wars of disintegration) and Iraq, to deny Saddam Hussein the potential leverage of a veto. If the condition is not met within three years, then states which have already ratified can convene a conference to decide on measures to "accelerate the ratification process" and facilitate early entry into force. Following concerns, raised principally by India, that the term "measures" might imply sanctions and that the provision as a whole was a threat to sovereignty, Ramaker gave the clarifying reassurance that "the current article on entry into force did not impinge on the sovereign right of any state to take its own decision about whether or not to sign and ratify the treaty." He also stated that Article XIV paragraph 2, which related to the conference, "did not refer to United Nations Security Council measures in accordance with chapter VII of the United Nations Charter."⁶² The NTB Committee report also placed on record that Article XIV did not impose any legally binding obligations on a state not party to the treaty, regardless of whether or not ratification by that state was a condition of entry into force. None of these assurances ameliorated India's objections sufficiently to alter a decision to defect that now appeared irrevocable.

The text that became Article XIV of the CTBT was formed out of bridging proposals from at least three delegations that were themselves actually opposed to basing entry into force on the P-5 + D-3 condition. Faced with what appeared to be a lose-lose situation, they tried to make the best of a bad job. To get the political conference through, proponents of this Article XIV had to make clear that the conference was not a waiver conference. India stressed that despite the Chair's assurances it still viewed the provision as coercive. On August 8, Arundhati Ghose repeated that India would not sign a CTBT text that did not address nuclear disarmament in a timebound framework, and announced that because of the current provision on entry into force, India would also block CD consensus on the treaty, a threat it carried out, with messy consequences.⁶³ Though Weston appeared triumphant, few others were happy with the outcome. Among CD members, a large majority had wanted a flexible provision

to encourage early entry into force, but the Article XIV in Ramaker's June 28 draft was never reopened. The CTBT went forward with its Achilles-heel EIF requirement identifying a rigidly defined list containing at least one declared defector. Castigated as "coercive"⁶⁴ by more than just India, Article XIV was derided by many. The conference mechanism, dismissed by some CD delegates as a "handwringing conference", has (at the time of writing) fulfilled their predictions that its powers were too limited for it to be effective in facilitating entry into force.⁶⁵

Misperception and Intransigence

The negotiating history on entry into force was characterised by muddle, misperception, dissonance and intransigence. It does not lend itself to rational theories of interest and outcome, unless a covert desire by several states to wreck the treaty is assumed. Such an assumption is contradicted by the endgame dynamic of fierce but solution-oriented concession-trading among key states such as Russia, China and the United States on other issues. India had given several months' warning of its intention to defect from the treaty, but the CD slid inexorably into an entry-into-force trap, and seemed to be surprised by how quickly the trap snapped shut. The diplomats themselves blamed India's domestic politics and some of the key personalities – Weston, too rigid and aggressive; Ledogar, too preoccupied; Ramaker, too weak; Bourgois, lacking the P-5 clout of her predecessor to outwit Weston; Ghose, manipulative and clever. While acknowledging that the personality, skills and status of strategic individuals can make a difference, each of these "personalities" was also a cipher fulfilling an institutional role. Was Berdennikov too successful in browbeating the Chair with his hostage-taking tactic, or was he, rather, a very competent diplomat pursuing his instructions with zeal? Although many seemed to pin the blame personally on Weston, the presence of a senior FCO official at the crucial meeting on June 20 indicates that what many viewed as maverick behaviour was within instructions. Was Ledogar too preoccupied or was the problem that Washington was not paying sufficient attention to the growing EIF crisis regardless of the many letters and cables received there? Ramaker, too, had to manage a highly charged conflict on the basis of information available at the time, without knowing of Moscow's willingness to settle for a P-5 treaty, for example. Secret back-channel bilateral communications between the capitals of key states, as well as the minilateral

negotiations among the P-5, may have facilitated some agreements, but at times also compounded the difficulties faced by non-P-5 diplomats responsible for the conduct and outcome of multilateral negotiations.

It appears, from conversations at the time and my subsequent interviews with the main protagonists, that no-one deliberately used entry into force as a means of undermining the treaty; moreover, few are prepared to admit that they made mistakes. Later revelations and hindsight indicate that alternatives may have been possible. At the very least, on the basis of what was knowable at the time, it appears there were errors of timing and tactics, and over-cautious attempts to paper over and manage conflict. The main problem, however, was a lack of sufficiently high level governmental and diplomatic attention, until far too late. Squeezed between the P-5 and the D-3, and against the pressure of the very potent, if not legally binding, deadline of September 1996, Ramaker was left to resolve the issue, but given insufficient support or ideas with which to counteract Berdennikov's veiled threats and Britain's strident determination. In the end, an unyielding provision was imposed against the implacable opposition of one delegation and the serious misgivings of many more. This was a management solution to ensure that EIF negotiations did not delay the treaty's finalisation, but it came at the expense of the CTBT's political credibility and future prospects.

Britain was apparently deceived by a promise from Pakistan, but that begs a larger question. Though taken as an insult directed at India, Weston's "wriggling on a hook" metaphor is more revealing of British attitudes to the CTBT: it is a metaphor related to fishing, to reeling in the D-3. The Conservative government had explicitly opposed a CTBT after taking power in 1979, and its negotiating posture from 1994-96 suggests that the policy preference underlying this position did not alter during the negotiations, unlike some of the other NWS. Binding the D-3 was therefore an overriding objective because nonproliferation was the major justification that realist policymakers in the NWS could ascribe to their participation in negotiating away their own option to conduct nuclear tests. The UK could afford to stick to its guns because it didn't regard the CTBT as intrinsically valuable in its own terms.

But if binding the D-3 was the aim, then the UK's analysis was glaringly wide of the mark where India was concerned. As subsequent events have shown, Perkovich's memo was a far more astute assessment of the consequences of trying to corner India with inclusion in this kind of list. Despite playing a constructive role on matters related to verification, the UK posture bore out the fact that John Major's Conservative government had been dragged unwillingly into the CTBT negotiations by the United States. It had little vested interest in the treaty and made very few concessions in the negotiations, with the exception of safety tests, associated more with British interest in achieving the indefinite extension of the NPT. The relative lack of US engagement on entry into force gave the UK plenty of space to flex its muscles on this issue. Revealingly, Weston proudly claimed that the treaty contained practically all of Britain's opening positions.⁶⁶ But such inflexibility is not necessarily laudable, since coerced agreement is less conducive to regime-formation than convergence achieved through negotiations and the building of shared norms and principles. The self-defeating entry into force provision is perhaps the clearest example of multilateralist objectives being undermined by the conflicting and contradictory understandings that the major players had about the role, function and benefits of multilateral arms control in general and the CTBT in particular.

Notes

¹ Arundhati Ghose, Ambassador of India, United Nations General Assembly, September 10, 1996.

² For a thought-provoking analysis of India's nuclear-related dilemmas at the time of CTB finalisation, see William Walker, "Viewpoint: India's Nuclear Labyrinth", *The Nonproliferation Review* (Fall 1996) pp 61-77.

³ This characterisation came from a European diplomat in off-the-record conversation with the author, August 1996. The revenge was supposedly against the Americans for inflicting their moratorium on Britain when the UK nuclear weapon and defence establishment still had some tests lined up to do.

⁴ Trevor Findlay, *Peace through Chemistry* (Canberra: Australian National University, 1993). pp 15-19.

⁵ Article III, 1963 Treaty banning nuclear weapon tests in the atmosphere, in outer space and under water. See also the discussion in Kim Tay, "Entry into Force", *Verification Matters No. 6* (London: VERTIC, September 1994).

⁶ See Chapter 3 note 92.

⁷ Article IX, 1968 Treaty on the Non-Proliferation of Nuclear Weapons.

⁸ The Chemical Weapons Convention eschewed the specification of certain states and provided for entry into force 180 days after the 65th state deposited its instruments of ratification, but not earlier

than two years after being opened for signature. Article XXI, 1993 Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction.

⁹ Post 1990 accessions to the NPT include a number of countries that for different reasons gave up substantial capabilities or nuclear weapon options, including Argentina, Algeria, Brazil, South Africa, as well as Belarus, Ukraine, and Kazakhstan after the Soviet Union's disintegration. China and France also chose to join in 1992, although their case was somewhat different, as they were recognised under the NPT as nuclear weapon states. See Chapter 2.

¹⁰ Permanent Representation of Sweden to the CD, *Draft comprehensive nuclear test ban treaty and annexed protocol*, CD/1232, (December 6, 1993). This draft was based on earlier drafts dating back to 1983. See especially Sweden's *Draft comprehensive nuclear test ban treaty*, CD/1089, (July 31, 1991); and CD/1202, (June 3, 1993). See also Maurice A. Mallin, *The June 1993 Swedish Draft Comprehensive Nuclear Test-Ban Treaty: Implications and Issues for Negotiations* (McLean VA: The Center for National Security Negotiations, SAIC March 1994).

¹¹ Sir Michael Weston, January 25, 1994, CD/PV.666.

¹² Grigori Berdennikov, February 1, 1994, CD/PV.668.

¹³ Sir Michael Weston, January 25, 1994, CD/PV.666.

¹⁴ As noted in Chapter 2, expansion of the CD had been expected in 1993, but failed to go through as a result of a last minute veto from the United States over admitting Iraq. The UK and France preferred the expanded CD option over the IAEA list, which also covered the P-5, D-3 and a number of other states with potential nuclear ambitions or capabilities, on the normative grounds that participation in the negotiations should confer an added incentive and interest in acceding to the treaty. The stand-off with the United States over Iraq took so long to resolve that Britain and France had abandoned their proposal by the end of 1994. The enlargement decision was not adopted by the CD until June 1996, just in time for the CTBT negotiations' final throes.

¹⁵ Friend of the Chair, *Working paper on signature, ratification, accession, entry into force*, March 10, 1994, CD/NTB/WG.2/9

¹⁶ China, Working Paper, *Entry into Force of the CTBT*, 20 June 1994, CD/NTB/WP.123

¹⁷ This discussion of the US's floated suggestions derives from conversations at the time with American and other diplomats in Geneva. I have not been able to obtain papers detailing the suggestions, and it is possible that they were not circulated in writing.

¹⁸ Zou Yunhua, *China and the CTBT Negotiations*, (Stanford CA: Stanford University Center for International Security and Cooperation, 1998) p 21.

¹⁹ Sha Zukang, September 5, 1995, CD/PV.717. In the end, China stopped testing after signing the CTBT in September 1996. That does not, however, mean that the concerns about the possibility of China continuing to test until entry into force were unfounded. Colonel Zou Yunhua acknowledged that China wanted "at least a few more tests", and until late in the negotiations China's diplomats were careful to leave open the possibility of testing after conclusion of the treaty, either through delaying signature (while declaring willingness not to impede entry into force) or through defying the norm established by the Vienna Convention on Treaties and Conventions, which China has avoided signing. See Zou, 1998, p 26.

²⁰ The Tlatelolco Treaty negotiators were conscious that two important target states – Brazil and Argentina – were at that time engaged in a race to acquire the technology for a nuclear weapon option (a potentially deadly rivalry that the treaty was intended to assist in defusing), and that this could affect the decisions taken by some of their neighbours. Moreover, Cuba's relative isolation and relationship with the Soviet Union made its accession difficult to influence and impossible to predict. To address this potentially destabilising dilemma, Mexico, with help from UN-based lawyers, notably William Epstein, developed the unusual waiver formula to facilitate early establishment of the nuclear weapon free zone. The formal EIF conditions required ratification by all the states in the zone of application, plus ratification of Additional Protocols I and II. However the treaty contained a provision whereby states which had ratified could choose to waive the specified EIF conditions, thereby enabling the treaty to enter into force for those that chose to abide by it. The treaty therefore became "operative" in April 1968. This formula was able to act as a confidence-building measure, allowing a credible treaty regime and implementing authority (*Organismo para la Proscripcion de las Armas Nucleares en la America Latina* – OPANAL) to be developed as the adherents grew in number. Jozef Goldblat, *Arms Control: A Guide to Negotiations and Agreements*, (London: Sage Publications, 1994), pp 149-153.

²¹ This summary was based on sight of a draft document and conversations with the Australian delegation during 1995.

²² Australia's national preference was still for a simple number, but the delegation acknowledged that the opposition to this appeared entrenched. The Australian model text therefore proposed that the basic

condition should specify ratification by all CD members plus observers (which would have been some 75 states, including the P-5 and D-3), but that the EIF article should explicitly provide for a conference to consider whether to waive this stringent condition, even if a few states on the list had not yet joined, and inaugurate the verification system. The conference could be initiated any time after two years from the treaty being opened for signature, and would be called by decision of those who had ratified. This was a modified version of the US waiver conference proposal, but without the US condition requiring all P-5 on board. Australia, *Comprehensive Nuclear Test Ban Treaty, Model Treaty Text*, February 29, 1996, CD/1386 and Australia, *Comprehensive Nuclear Test Ban Treaty, Explanatory Notes Accompanying Model Treaty Text*, February 29, 1996, CD/1387.

²³ Iran based entry into force on the full IAEA list of all 68 states which have or have had any level of nuclear technology or capability, and specified that the treaty should enter into force if 65 out of these 68 states ratified (a modified version of the percentage option). Islamic Republic of Iran, *Draft Comprehensive Test Ban Treaty*, February 21, 1996, CD/1384.

²⁴ India, working paper, *Entry into force*, January 29, 1996, CD/NTB/WP.297.

²⁵ See Chapter 5.

²⁶ The quote was taken from an informal non-paper provided to the author by the British delegation.

²⁷ Such concerns came to a head after India and Pakistan conducted nuclear tests in May 1998. See Chapter 2.

²⁸ Harald Kreid, 28 March, 1996, CD/PV.733; and Austria, Working Paper, *Draft Treaty Language on Provisional Application*, June 16, 1995, CD/NTB/WP.242.

²⁹ Sir Michael Weston, interview with the author, Matfield, June 11, 2002. See also note 13.

³⁰ Author's conversations with senior Dutch officials, The Hague, March 29, 2002.

³¹ Jaap Ramaker, interview with the author, July 16, 2001.

³² Author's conversations with senior Dutch officials, May 28-30, 1996; and confirmed by Jaap Ramaker, interview with the author, Vienna, July 16, 2001.

³³ Jaap Ramaker, Chair of the Nuclear Test Ban Committee, statement to the CD, May 30, 1996, CD/PV.736.

³⁴ See Chapters 5 and 7.

³⁵ George Perkovich, *India's Nuclear Bomb*, (Berkeley CA, University of California Press, 1999) pp 353-354.

³⁶ Arundhati Ghose, June 20, 1996, CD/PV.740.

³⁷ Robert Bell, from a transcript of a Coalition to Reduce Nuclear Dangers press conference coinciding with the start of Senate Hearings on the CTBT. See "The Issues Behind the CTB Ratification Debate", *Arms Control Today* (October 1997), www.armscontrol.org/act/1997_10/coaloct.asp.

³⁸ Sha Zukang, interview with the author, Beijing, October 15, 2000.

³⁹ Grigori Berdennikov, interview with the author, Vienna, July 17, 2001.

⁴⁰ The memo is reportedly classified, and I rely on information from a former US official close to the negotiations, provided during a conversation with me in Washington DC, April 2002. When questioned informally at a reception in Stockholm, September 2002, Berdennikov admitted hearing "something" of a memo along the lines I had described, but he denied seeing it and appeared to doubt its authenticity. After an informal follow-up discussion with Jaap Ramaker in Washington DC, November 2002, I am convinced that he knew nothing of such a Russian memo. Because of the potential significance of this memo, if true, in assessing Russia's true bottom line on EIF, and in view of my informational source and Berdennikov's admitted recollection of hearing about it, I have decided to include it in this account, while emphasising that more time is required before the full truth of this matter can be brought into the open.

⁴¹ Sir Michael Weston, interview with the author, Matfield, June 11, 2002.

⁴² This speculation, rife among UK NGOs, was based on the knowledge that the MoD had been severely put out when the United States declared a moratorium in 1992, as it scuppered the nuclear establishment's chances of completing three tests that had already been planned and prepared. Moreover, Malcolm Rifkind and John Major were unhappy with the Clinton administration's decision to renew the US moratorium in July 1993, as they had made strong representations from the British government and encouraged behind the scenes intergovernmental collaboration between the respective nuclear establishments and between the MoD and Pentagon officials opposed to the moratorium. Many expressed suspicion that the main enthusiast for the stringent list was Weston himself, as he appeared alternately to offer Ramaker advice and tie him up in knots. This was denied by Sir Michael Weston, who acknowledged that the MoD rather than the FCO was the driving force behind Britain's refusal to compromise over entry into force. Sir Michael Weston, interview with the author, Matfield, June 11, 2002.

- ⁴³ Sir Michael Weston, conversations with the author, June 1996. After the vote on the CTBT at the United Nations on September 10, 1996, Sir Michael told me he was very disappointed in Pakistan's decision not to sign the treaty. (Pakistan's ambassador to the CD, Munir Akram, in his statement to the UN General Assembly, September 10, 1996, had declared that Pakistan supported the resolution to adopt the CTBT but would not sign the treaty until its regional situation warranted, understood to mean when India signed.) Sir Michael's surprise appeared naïve at the time, since almost everyone else had assumed this to be Pakistan's position. When questioned about this years later, Sir Michael referred to a specific undertaking given to the British government by Pakistan, the gist of which was that it would join the treaty if India's acquisition were made a condition. It was apparently on the basis of this undertaking that Britain believed that the P-5 + D-3 condition would work because India would be left isolated, which Britain thought it would find untenable over time. Sir Michael Weston, interview with the author, Matfield, June 11, 2002.
- ⁴⁴ In late August 1995, Gérard Errera was replaced by Joëlle Bourgois, formerly France's ambassador to South Africa. Bourgois, who later initiated and successfully coordinated joint P-5 initiatives, particularly the first P-5 statements on the NWS' efforts to comply with the NPT during the post-1995 review process, had needed time to adapt from bilateral diplomacy to the complexities of multilateral arms control, an area in which she had little previous experience. Errera's advantages had, by contrast, included long experience in nuclear and security issues and close relations with the Quai d'Orsay and CEA; his combative personality had been a dominant force during his time in the CD, especially in driving the Franco-British partnership with Weston in the P-5. His departure caused a significant shift in the P-5 dynamic. As a latecomer to the P-5, and its only female ambassador, it was very difficult for Bourgois to make France's more conciliatory positions carry as much influence as Errera's delaying tactics.
- ⁴⁵ The Russian Duma, for example insisted that US ratification of START II and the Memorandum of Understanding were necessary for the treaty to take effect.
- ⁴⁶ Memo from George Perkovich on "EIF and India", June 2, 1996. Perkovich was at the time a senior staff member of the W. Alton Jones Foundation, which funded many of the NGOs working on the CTBT and NPT, including Acronym, and his memo was intended for NGOs and US officials.
- ⁴⁷ Antonio de Icaza, statement to the Ad Hoc Committee on a Nuclear Test Ban, June 20, 1996.
- ⁴⁸ Arundhati Ghose, June 20, 1996, CD/PV.740. See Chapter 5 for a fuller description of this pivotal statement justifying India's position.
- ⁴⁹ Chairman of the Ad Hoc Committee on a Nuclear Test Ban, working paper, *Entry into Force*, June 20, 1996, CD/NTB/WP.334.
- ⁵⁰ The Conference on Disarmament finally agreed on June 17, 1996, to admit 23 new members. See Chapters 2 and 5.
- ⁵¹ Conversations with the author, June 20, 1996, and March 29, 2002.
- ⁵² Ibid.
- ⁵³ Sir Michael Weston, interview with the author, Matfield, June 11, 2002. While the written statement was said to contain the "wriggling on a hook" reference, Weston's comment about Japan and Germany *et al* being in the negotiations mainly to pay for the treaty was recalled as an extemporaneous remark, which he later regretted. See Chapter 5.
- ⁵⁴ WP.334
- ⁵⁵ Robin Cook, Notices of Questions: June 24, 1996, No. 131 (34753-34754), *Hansard (Commons) Official Reports*.
- ⁵⁶ David Davis, Commons Written Answers, Foreign and Commonwealth Affairs, June 27, 1996, *Hansard (Commons) Official Reports*, Comprehensive Test Ban Treaty, col 197.
- ⁵⁷ David Davis, Commons Written Answers, Foreign and Commonwealth Affairs, June 27, 1996, *Hansard (Commons) Official Reports*, Comprehensive Test Ban Treaty, col 198.
- ⁵⁸ Michael Krepon, communication to the author, April 1, 2002. Krepon, who had been trying to bring the high level group together for several weeks, also commented on how difficult it was to get anyone interested in taking up what they viewed as a procedural issue, as compared with the clearly political, substantive issue of scope.
- ⁵⁹ Author's conversations with senior Dutch diplomats, March 29, 2002.
- ⁶⁰ Author's conversations with UK and French delegation members, June 28, 1996.
- ⁶¹ Sir Michael Weston, interview with the author, Matfield, June 11, 2002.
- ⁶² *Report of the Ad Hoc Committee on a Nuclear Test Ban to the Conference on Disarmament*, August 16, 1996, CD/1425.
- ⁶³ See Chapter 5.

⁶⁴ For example, Bangladesh, one of the 44 listed states and a NPT party with “no ambitions for nuclear weapons”, complained about the “coercion” implied in Article XIV and said that as one of the poorest nations in the world, its decision on ratification would have to be based on “budgetary arithmetic”. Anwar Hashim, August 15, 1996, CD/PV.745

⁶⁵ Indeed, it is not clear to what extent the conference has the power to exert significant levels of pressure or facilitate provisional application. See George Bunn, with Rebecca Johnson and Daryl Kimball, *Accelerating the Entry Into Force of the Comprehensive Nuclear Test Ban Treaty: The Article XIV Special Conference* (Washington DC: Coalition to Reduce Nuclear Dangers, May 1999). At time of writing, two Special Conferences have been held in accordance with Article XIV: in October 1999, a week before the US Senate refused to ratify the treaty; and in November 2001, at which time the Bush administration astonished its allies by boycotting the conference, failing even to send even a token representative. The Conferences have adopted declarations and made appeals to the hold-outs, but have fallen short of any concrete measures to exert pressure or facilitate application of the treaty.

⁶⁶ Sir Michael Weston, interview with the author, Matfield, June 11, 2002.

Chapter Nine

Expectations, Interests and Multilateral Convergence: Considerations and Conclusions

As he signed the Comprehensive Test Ban Treaty on September 24, 1996, President Bill Clinton called it *"the longest sought, hardest fought prize in arms control history"*.¹ This long struggle was characterised by competing motivations not only for and against halting nuclear tests but also for and against disarmament.

The opposing views played out in both the international forum and in the domestic debates of the major states. In favour of a test ban were those who wanted to prevent the development of new and destabilising weapons, protect against further environmental damage and harmful releases of radioactivity, and curb proliferation. Test ban opponents, by contrast, associated their own country's possession of nuclear weapons with stability and security; they wanted to continue testing in order to keep open their options to develop or modernise "safe and reliable" nuclear arsenals into the future. Whilst opposing proliferation by other actors, they tended to regard their own nuclear weapons as both a guarantor of national security through deterrence and a conveyor of international prestige and status.

Only six states had conducted a nuclear explosion prior to 1994, when the negotiations opened. The NPT already forbade nuclear testing by its non nuclear weapon states parties, who comprised the majority of CD members. Because of the normative value associated with multilateral regimes, however, no serious consideration was given to holding plurilateral negotiations among the NWS and non-NPT possessors most directly concerned.

While the CTB negotiations can be characterised as a process of intentional regime-building by all concerned, this study has demonstrated that negotiators' harboured substantially different expectations and requirements of the regime. The conflicting views occurred in a context in which assumptions that nonproliferation was a 'good' appeared to be commonly accepted (at least with lip-service). Yet this ostensibly shared objective masked differences of negotiating goals that correlated significantly

with where a state was located on the spectrum of nuclear capabilities and interests. Having detailed the processes of convergence in the negotiations, the thesis now concludes by drawing out the major themes, first considering how a state's interests in nuclear weapons – as declared or *de facto* possessor, aspirant or non-nuclear weapon state – influenced its expectations and negotiating posture, and then summarising the processes and factors most relevant for explaining first the transition from prenegotiations to negotiations and then the outcomes on scope, verification and entry into force.

Nuclear Weapons, Programmes and Perceptions of National Interest

The nuclear weapon states viewed the CTBT as a component of the wider nonproliferation regime, which had defined and (as far as they were concerned) legitimised their nuclear capabilities, conferring prestige, leadership and special privileges. Consistent with both realist and neoliberal regime analysis, they agreed to negotiate a CTBT for three reasons: i) to cap the nuclear capabilities of India and Pakistan before they became weaponised to any significant degree; ii) to induce all the *de facto* nuclear weapon possessors to take this first step towards formal engagement in the established arms control and nonproliferation regimes and to place a further barrier in the way of any nuclear aspirants; and iii) to reinforce the credibility of the NPT so that it would be indefinitely extended in 1995.

The probability that the CTBT would freeze the capability differentials among the P-5 was useful for the United States and did not seem to be of paramount concern to the others, who recognised that economics largely determined their post cold war military asymmetries. Their important security concerns were to stabilise the status quo in relation to each other, secure their nuclear arsenals, and prevent the rise of additional nuclear weapon possessors. The CTBT was vital in relation to the NPT linkage because it was a stated objective in the treaty's preamble and was demanded by the non nuclear weapon states – especially the nonaligned – and civil society as the minimum basic step to show that the NPT's Article VI was being taken seriously. Israel's nuclear arsenal, though ritually included in appeals to the D-3, was of less political importance for the P-5 than the nuclear ambitions of India and Pakistan,

which were viewed as regionally destabilising and less well controlled. Israel's involvement was required chiefly to ensure the credibility of the nonproliferation regime for the Arab states and Iran, whose consent for the NPT's extension was considered politically crucial.

Negotiating a CTBT did not mean that any of the P-5 had been converted to the cause of nuclear disarmament.² Defining the CTBT's role and function mainly in nonproliferation terms, they negotiated with a view to normalising the possession of nuclear weapons by their privileged group, while strengthening the barriers against others. Though the P-5 differed in how bluntly they expressed the sentiment that the CTBT was to ban the bangs not the bomb, they all sought to protect as much of their nuclear weapons research and development options and infrastructures as possible. Even when they adopted the zero yield scope, they all made sure to offset its disarmament effects by ensuring more effective capabilities through, for example, stockpile stewardship programmes, enhanced subcritical and hydrodynamic testing and inertial confinement fusion. These programmes to mitigate any disarmament-leaning outcomes of the CTB negotiations have provoked considerable criticism from the NNWS and NGOs, for whom a legitimate aim of the treaty was indeed to erode the role of the nuclear weapons laboratories and design infrastructures and promote nuclear disarmament.

The D-3 pursued different strategies in accordance with their perceived interests and political resources. For example, Israel prudently chose to slipstream behind the United States through most of the negotiations, aided by its close alliance. Influenced also by the fact that it was not a member of the CD until June 1996, Israel adopted a relatively low profile except when it had to fight for national interests that diverged markedly from those of the United States. With on-site inspections, for example, Washington wanted rapid decision-making and easy access, while Israel, like its D-3 cohorts and China, wanted to establish tough procedural hurdles to protect its facilities from most kinds of scrutiny. Israel's confidence in its continuing collaboration with the United States and the ability of its nuclear arsenal to perform the political and military functions it required vis-à-vis its non nuclear armed regional adversaries enabled it to view the prospect of a CTBT with equanimity and become an early signatory.

The political calculations for Pakistan and India were rather different. Having conducted its first nuclear explosion in 1974, outside the NPT definitional date, India was institutionally excluded from gaining the perceived status and privilege of a NWS under the NPT-based nonproliferation regime. India operated from essentially realist assumptions, but its calculations were complicated because it was trapped between a desire for power through increased nuclear capabilities and its long-touted advocacy of nuclear disarmament, linked to that part of its post-colonial identity and sphere of influence that derived from the Gandhi-Nehru heritage and leadership in the nonaligned movement. India's regional situation vis-à-vis China, an established NWS, and unstable Pakistan, with nuclear potential and inferior conventional forces, further complicated New Delhi's calculations. Denied access to special status through the NPT, India has long sought to undermine the nonproliferation regime as it is currently structured. The treaty's indefinite extension without a vote in 1995 was perceived as a severe political blow, reinforcing India's exclusion from the nuclear club. India then used the CTBT to underscore its rejection of discriminatory nonproliferation, and was helped by the clumsy handling of the entry-into-force issue and the British ambassador's provocative rhetoric.

India's dilemmas have some of the characteristics of Rousseau's stag hunt, but illustrate especially the importance of how the stag is perceived. If the treaty is conceptualised in the NWS' terms, the CTBT stag is a nonproliferation feast. In India's view, the NWS wanted the cooperation of everyone else to capture this nonproliferation stag, but intended to keep all the best parts. Since India had already concluded that nonproliferation as presently constructed excludes states other than the P-5 (and their nuclear allies) from a full share of security, the benefits for India's perceived national security of sharing in the capture of the CTBT were uncertain. Therefore, India defected from the treaty hunt to secure the lesser hare of its own nuclear arsenal. If, on the other hand, the CTBT stag were to be recontextualised as a nondiscriminatory disarmament objective, as most of the nonaligned and some middle powers sought, India's defection ensured a suboptimal outcome that undermined disarmament efforts worldwide. Viewed in this light, India satisfied its own immediate hunger for regional power and NWS status at the expense of a future security objective desired by most of the world, which would arguably have offered

greater satisfaction and security for all, including India itself, over the long term. India's nuclear disarmament positions in the CTBT, derided by many as either idealist hypocrisy or cynical rhetoric, were a way of hedging its bets: strategically, since nuclear disarmament could diminish the relative power of competitors, especially China; and tactically, as a 'best versus good' let-out from the finalised treaty.

Pakistan was also outside the NPT and also employed disarmament rhetoric, especially in appealing to nonaligned solidarity, but its role was different from India's. Pakistan's interests were conditioned by its regional relations and conventional military inferiority with regard to India. Its primary objective was to ensure that India gained no relative advantage and, where possible, to use the negotiations to increase pressure on its neighbour. It was in Pakistan's interests to be a supporting adjunct to China on many issues, but it did not merely slipstream in China's wake, and occasionally fronted an issue for China or the G-21, playing its D-3 ambitions off against both the NWS and the NNWS. This, and its manipulation of Britain during the EIF negotiations, show the shrewdness with which it maximised its position, despite being comparatively disadvantaged in terms of power.

Traditionally, and consistent with both the realist and neoliberal approaches to multilateralism, the nuclear weapon possessors (both the P-5 and D-3) are viewed as having direct interests in the negotiations by virtue of their nuclear capabilities. Perceptions of the level of interest may be determined not only by the number or type of weapons a party possesses, but also whether the weapon (or a practice such as nuclear testing) is regarded as of strategic or marginal importance to national security or political identity and status.³ Aspirants, too, have direct interests in the negotiations, at least insofar as the outcome(s) may close off their options. The non-nuclear weapon states, by contrast, are generally considered to have 'only' indirect interests in the outcome, deriving from their security interests in building an effective regime. This marks out a fundamental difference between the theoretical approach of new multilateralism and both the realist and neoliberal schools: new multilateralists take the view that the regime interests of non-weapon possessors are direct and actual and, in terms of their national security, equivalent to the weapon-based interests of possessors.

The thesis shows that the NNWS themselves seemed to be equivocal about the importance of their interests in the CTBT. This may have been due to the dominance of realist training among foreign policy practitioners.⁴ Though the nonaligned underscored as often as possible that their objective in negotiating a test ban was disarmament, which was portrayed, with due reference to the NPT's Article VI, as an obligation and objective of nonproliferation, they lacked conviction and coherence. Their marginalisation can in part be explained by their weaker resources and bargaining power. That begs the question however: if the NAM had perceived themselves as having actual security interests in the treaty outcome, it is likely that more would have found the resources to increase their bargaining effectiveness, as India, Pakistan and, indeed, aspirant Iran chose to do.

Many NNWS – and particularly the Western allies of the United States, Britain and France – seemed generally to accept that their interests in a strong regime were of less weight than the NWS' nuclear force-related interests. Though they clearly wanted a strong test ban, they appeared prepared to accept almost any version of a CTBT that the NWS were willing to accede to. Where much of the dynamic of the CTBT negotiations in Geneva was the result of the NWS pursuing their narrower interests, most of the Western middle powers were motivated by a desire to get a test ban treaty that would prohibit the worst of nuclear testing, contribute to the NPT regime, and stand up in court. Yet faced with the 'reality' of the NWS' expectations, most NNWS started the negotiations thinking the payoff structure was bounded (essentially zero sum), and they were therefore prepared to manage the process of convergence by facilitating concession-trading, and seeking to balance or split the differences.

Dynamics of Convergence

Two types of convergence were analysed in this thesis: distributive, encompassing both imposed and managed divisions of gains and losses; and integrative, in which perceptions of what would constitute an acceptable agreement are expanded or changed, principally through cognitive strategies and the shaping of norms and perceptions of interests. The following sections assess the dynamics of convergence

in the four principal areas studied: prenegotiations, scope, verification and entry into force.

Prenegotiations

For the purposes of this analysis I have limited my discussion of prenegotiations to the four-year period immediately preceding the January 1994 opening of negotiations. Following the stand-off on the CTBT that prevented agreement of a final document from the 1990 NPT Review Conference, the major hold-outs against test ban negotiations in the CD continued to be the United States and United Kingdom. France's accession to the NPT in 1992 affected the dynamic but generally reinforced the Western nuclear alliance. China, which had also joined the NPT in 1992, used rhetoric that echoed the NAM on nuclear disarmament, but Beijing was actually pursuing the major modernisation of its nuclear arsenal, so continued to be dependent on testing. Of the NWS, only Russia appeared genuinely keen on a CTBT. The precipitating factors that brought the major parties to the negotiating table were threefold: the geostrategic upheaval at the end of the cold war which opened up new opportunities in security relations and nuclear policy; the forthcoming extension decision on the NPT in 1995; and the Russian, French and US moratoria on testing in 1991-2.

The first two events were exogenous. The moratoria, however, were the result of the intentional actions of political players, both government and civil society. Though the reasons and dynamics were different for each case, all three testing moratoria were the consequence of domestic decision-making, in which civil society demands and strategies were an important factor. Though the last moratorium to be announced, it was the United States that had most impact on shifting the CD logjam and facilitating the start of negotiations. This was mainly a function of its pre-eminent political power, but also due to the CD's consensus rule: as long as the United States opposed the CTBT, the CD was paralysed on this issue, as it had been from the beginning of the Republican reign in 1981. Once the United States halted testing and the race was on for a CTBT, it became much harder for other reluctant states to avoid participating in the negotiations.

As Chapter 4 discussed, the US moratorium was imposed through a combination of public mobilisation and legislative strategies on a president whose policy preference was to continue testing. Unlike the Russian and French moratoria, the Senate legislation explicitly linked the US moratorium to negotiations on a CTBT – a classic example of prenegotiations confidence building. The initial duration, however, was only for nine months. The legislation bears out Hampson's observation about simplified focal points and issue sequencing: the fact that they were being asked to impose a relatively short, potentially temporary measure, that included an option for up to 15 safety tests, undoubtedly swung the votes of a number of Congressional representatives who would have balked at calling for a total, permanent cessation of nuclear testing at that time. As a modest confidence-building step that was reversible and not legally binding, a moratorium was an attractive option for those wanting to show support for a test ban, without necessarily entailing commitment to all the steps to accomplish a comprehensive prohibition treaty and regime.

A further important factor was that pro-CTBT Democrats won the White House in 1992. Had George H.W. Bush been re-elected to a second term, it is likely the moratorium legislation would have been reversed in 1993. It is not so certain that the US would have continued to oppose CTB negotiations, however, as there were some Republican as well as Democrat voices advocating a more constructive attitude towards the test ban treaty in the run-up to the NPT extension decision. Though we cannot know what might have happened, prenegotiations theory predicts that it would have been harder to go forward into negotiations if the United States and Britain, as well as China, were continuing with periodic underground explosions. In such circumstances, it is probable that France would have resumed testing before 1995, but the different circumstances and timing would have lessened the political impact.

Though not as decisive as the US moratorium in shifting the logjam, the Soviet – and especially the French – moratoria were important in helping to create the conditions to push for the US moratorium in 1992, by fostering a sense that there was a 'window of opportunity' that was worth the expenditure of political capital by the Democratic politicians who pushed through the moratorium legislation. Crisis, which Hampson and others have highlighted as important in bringing parties to the table for arms control and environmental negotiations⁵ does not seem to have been relevant here.

This finding does not necessarily contradict Hampson's observation, but requires it to be qualified. Crisis clearly has a role to play in some situations: the Cuban Missile Crisis, for example, concentrated US and Soviet minds on the necessity for better cooperation, thereby overcoming some of the artificially politicised verification hurdles and congressional or bureaucratic opposition to a partial test ban treaty. In the case of CTBT prenegotiations in the 1990s, however, the end of the cold war provided opportunities and the 1995 NPT extension decision may have imparted urgency, but though these acted as spurs to the negotiations, it would stretch Hampson's meaning to describe either of them as a crisis.

Gorbachev's moratorium was pragmatically determined, dictated by the nationalist-environmentalist popularity of an ad hoc civil society movement that within less than two years had networked widely with the peace movements of the west, receiving resources and help to promote its demand for the closure of the main Soviet test site at Semipalatinsk. By the end of 1989, as the Soviet Union disintegrated, the Nevada-Semipalatinsk Movement had already forced an end to testing in Kazakhstan. The Soviet Union at the time possessed over 30,000 nuclear weapons, though some were obsolete. The nuclear arms race had bankrupted the Kremlin. Since the remaining site at Novaya Zemlya in the Arctic had environmental problems and was increasingly expensive to use, Gorbachev concluded that a moratorium was in his interests. Like France, however, there is little evidence that this gesture was undertaken with a CTBT strategy in mind. Although Gorbachev favoured a CTBT, his experience of having his 19 month moratorium rejected in the mid-1980s had hardly been encouraging.

In France, Mitterrand saw the moratorium as a way to buy off a political challenge from the Green Party by dressing in more environmentally friendly clothes. As France's programme of tests (and justifications) in 1995 showed, the French nuclear establishment was unprepared for a total ban and clearly expected only a temporary halt in 1992. With Republicans in the White House and Conservatives in Downing Street, there was no reason why Mitterrand should have anticipated that the United States would follow suit, and it is probable that he expected to resume testing after a year or so.

Taken together, the three moratoria reflected and also promoted a confidence-building breathing space in nuclear testing, thereby helping to pave the way for negotiations on the CTBT to begin in earnest. There was no crisis or shock; nor was the diffusion of new knowledge, norms and concepts of relevance here, as the same arguments for and against the CTBT had been heard for years. Civil society's role was in raising the political stakes and narrowing the options for decision-makers, particularly by tying the moratoria in with issues of more direct political or financial interest to Gorbachev, Mitterrand and Bush. At the time, the fact that moratoria are by definition more temporary and revocable than treaties made it easier for the leaders to undertake them as interim steps. Each moratorium was used to reel in further weapon states. When the United States was signed up it explicitly called for CTBT negotiations, while at the same time pulling in Britain. The US moratorium thus became the tipping point in favour of a CTBT.

Scope

Because the scope conveyed the basic obligations and core philosophical and political underpinnings of the treaty, a range of interest groups actively sought to influence national positions and achieve an outcome that would accord with their primary objectives, whether nonproliferation or disarmament. The P-5, among whom interests were both complementary and competitive, tried to keep scope negotiations within their own minilateral forum. As a concession to multilateral concerns and conscious of the approaching NPT Review and Extension Conference, they delivered occasional position statements in the CD and NTB Committee.

The core interest shared by all the NWS was to preserve their nuclear weapon programmes while curbing the options of others. Most NNWS did not subscribe to this objective, but opposition was diluted by the acceptance of nuclear deterrence by an influential group of nuclear allies. Their approach was pragmatic, and they devoted themselves to getting the technical parts of the treaty worked out and in reining in disarmament demands from the nonaligned. The G-21 generally wanted a workable convergence between a timely achievable treaty and one that was disarmament oriented, but their effectiveness was diminished by inadequate resources and the difficulties of substantive coordination, given the membership of India, Pakistan and, to a lesser extent, Iran. Had the P-5 been able to cooperate more effectively during

the first half of the negotiations, it might have been possible for them, as the dominant actors, to have imposed a scope outcome on the rest that would have represented narrow P-5 interests far better than the actual outcome did. But because of their asymmetrical technological capabilities, political distrust and rivalry, the P-5 were unable to reach a satisfactory convergence by means of concession trading over 'activities not prohibited'.

As a consequence of their failure to agree on even a threshold for hydronuclear experiment yields, the P-5 ended up with a zero yield scope that reflected the hopes (if not expectations) of the structurally marginalised disarmament advocates more closely than their own perceived NWS interests. To minimise the political and military impact of the scope decision, the NWS sought to offset the zero yield by declaring their intentions to ensure stockpile maintenance and enhancement without explosive testing (in many cases entailing an increase in resources to these areas of what the US called stockpile stewardship). All but China also explicitly linked their supreme national interests with the condition of their nuclear arsenals, thereby preparing the ground for a future withdrawal based on making the argument that the test ban had resulted in a degradation of nuclear forces.

While the outcome did not correlate with attributive political power in realist terms, power and self interest were relevant to an understanding of why the NWS' rivalry outweighed their mutual interests. This was a period of rapid geostrategic transformation, and despite the obvious military asymmetries, each wanted to retain their technological and military ground and, indeed, the political status they associated with nuclear weapons. For example, safety tests provided a context in which Britain and France could assert that they had NWS responsibilities to maintain safe, reliable nuclear arsenals. Though the French delegation appeared to slipstream in Britain's wake on safety tests, France's desire for such an option was actually greater than Britain's. Since the late 1950s Britain has benefited from nuclear cooperation with the United States, but France has relied more on its own research and capabilities. American opposition to the Franco-British safety test provision posed a major problem for the credibility of the British position "since Britain relies on the American test facility... it made no sense to insist on the right to carry out safety tests".⁶

France's position was more consistent with its nuclear doctrine and infrastructure, though that did not make it any more palatable to CTBT advocates.⁷ As far as Paris was concerned, nuclear weapons had secured for France a post-war "international rank" and strengthened its position within Europe, particularly vis-à-vis Germany. France's support for a CTBT was made contingent on developing simulation capabilities, as Ambassador Érrera had spelled out: until the nuclear establishment could be sure that Chirac would win the election and lift the moratorium, safety tests or a high ANP threshold had to be held open as options. Nuclear testing provided the overt demonstration of France's nuclear status, national independence, technical prowess and willingness to defend itself.⁸ Some officials also claimed that without further testing, three newly-developed warheads, the M-5, the M-45, and the TN-75, would not be able to be certified for deployment.⁹ Safety tests may therefore have been one approach to the problem that the French nuclear establishment later resolved by resuming nuclear testing in late 1995.¹⁰ In contrast to the ease with which Britain appeared ready to demonstrate its "good NWS" credentials by giving up the safety test proposal, France's Ambassador Érrera characterised the move as "a very hard decision to come to".¹¹

Britain was equivocal about the need for safety tests, as indicated by contradictory government statements at the time. As a delaying mechanism the demand could only have played a small role, since discussion of safety tests took up relatively little time, but it can be understood as part of an overall strategy of delay, illustrated also in the tactics the British and French delegations employed to prevent Marín Bosch from issuing his Chair's text in June 1994, and the 'reversed linkage' by which they countered any attempts to conclude the CTBT before the NPT Review and Extension Conference. The timing of the decision to drop the proposal was related to the NWS' desire to obtain the NPT's indefinite extension, suggesting that whatever the original intention, safety tests were retained mainly as a sacrificial device to be given up with great display in time for the NPT conference.¹² However, since most NNWS had regarded the safety tests, like Washington's ten year easy opt-out "elephant in the living room" as a non-starter, dropping them failed to impress as much as the tacticians had hoped.

While the Anglo-French demand for safety tests was held longer than expected, it was nothing compared to China's persistence on PNEs. Rather than being a bargaining counter, as many CD diplomats had assumed, PNEs occupied a central position in China's negotiating posture, but this may not have been the original intention.¹³ Since China had no PNE programme and was well aware of the practical problems that had led to the Russians and Americans abandoning their PNE programmes, it is unlikely that Beijing had suddenly developed an overriding interest in conducting such explosions. More plausibly, PNEs were introduced into the negotiations to provide a peaceful uses justification in case China wanted to reject the treaty. As with the familiar early demand on no first use, China frequently deploys ideological positions with the objective of enabling negotiators to walk away if necessary without losing face with important domestic constituents or international allies (in China's case, its credentials with the NAM). If this analysis is correct, PNEs started out being for China the equivalent of what linking entry into force with disarmament was for India – an ideologically defensible get-out provision, if one were to be needed. Like India, China was equivocal about the CTBT when it entered the negotiations. The refusal to abandon PNEs before the endgame makes more sense if they are understood as China's 'best-versus-good' weapon. But it appears that by the time Beijing had decided that it would be more in China's interests to join the rest of the P-5 in a CTBT than to remain outside, the negotiators' own room to manoeuvre appears to have constricted. In other words, a self-fulfilling feedback loop was created, in which the negotiators made such an appealing case for retaining the PNE option that they convinced domestic audiences, especially in the influential People's Liberation Army. There is evidence for this conclusion in the fact that China's negotiators held out for a PNE mention in the final treaty that is purely symbolic, with no institutional weight and no chance of being successfully invoked.¹⁴

Apart from Russia's equivocation, the rest of the NWS opposed PNEs; yet when zero yield had swept away HNE options, they were quite willing to do a trade-off with China to allow a more accessible provision for PNEs in exchange for Chinese concessions on other issues. Hence it was not in the minilateral P-5 bargaining that the demand for PNE was defeated, although it was undoubtedly helpful that China was relatively isolated and the other NWS had no significant interests at stake. Instead, the CTBT study shows that when it was on the verge of being accepted by

the P-5, the PNE permission was scuppered by the efforts of strategically-placed civil society actors working in partnership with several key Western NNWS such as Australia, Germany, Japan and Canada. By recasting the proposed PNE permission as a legitimiser for continued research into nuclear explosions by the P-5 and D-3, this civil society-middle power alliance undermined the P-5 deal and the options for managed convergence put forward by Russia and Iran.

While eliminating safety tests and PNE from consideration was important, the turning point in the CTBT negotiations was indubitably the decision to go to zero, and this was almost entirely determined outside Geneva. According the resumption of French testing a decisive role in the zero yield outcome, as some – not least the French themselves – have claimed, would be consistent with theories about the role of crisis and exogenous shock in multilateral negotiations.¹⁵ The evidence shows, however, that it was not the French decision *per se*, but international public reaction, that provided the policy-shaping jolt that pushed Clinton off the fence. The swiftness and intensity of public outrage, expressed through boycotts and demonstrations in many countries, acres of newsprint, and thousands of letters to the White House, reminded Clinton (ever sensitive to public opinion) that a total test ban was an important and popular objective. The protests also conveyed the warning that if testing were not properly banned, there could be a revival of the kind of anti-nuclear protest movements witnessed in the 1980s. If perception of crisis was a factor in this case, it was not exogenous, but a politically-generated crisis engineered mainly by transnational civil society.

The second important factor in shaping the zero yield decision was the provision of technically relevant solution-oriented information by nongovernmental scientists and arms controllers in Washington. These resembled Peter Haas' epistemic communities in a number of ways,¹⁶ but the CTBT case showed several knowledge-diffusing but politically fragmented groups of epistemic actors – not communities – offering competing information and advice. The most significant of these were in the United States: the JASON Group, which comprised experts from both the governmental and nongovernmental sectors, and the scientists and officials based in the US nuclear laboratories. Both groups were ostensibly responsible to the Department of Energy, whose Secretary, Hazel O'Leary, was more positive towards a zero yield CTBT than

many in her department. In addition to epistemic actors, norm entrepreneurs favouring or opposing zero yield were active among scientists and advisers dispersed among US government agencies and different kinds of nongovernmental institutions. Since there were at least two sets of expert authorities pulling in different directions, O'Leary based her position largely on an idea of the norms and principles that her advisers – formerly from pro-test ban advocacy groups – were promoting for a genuinely comprehensive test ban regime; the expert arguments were used to defend and justify her choice but were not decisive in determining it. In the US interagency process, O'Leary's decisions represented the DOE, greatly reinforcing the position of institutionalists within the State Department, such as Tom Graham and John Holum, who were keen to see a CTBT that would be credible for the NNWS and reinforce the nuclear nonproliferation regime.

The zero yield decision became possible not only because the P-5 were deeply divided over threshold levels, with no acceptable managed convergence in sight, but because there was also warring within and between the various US agencies. Transgovernmental alliances between the nuclear scientists and military officials of more than one P-5 country further complicated the picture. In this situation, in which interests and power were fragmented and pressure was being exerted on all sides of the argument, Clinton chose a scope more consistent with idealist views of a test ban, i.e. one that contributes towards disarmament as well as nonproliferation and arms control. This analysis of the shaping of the outcome on scope highlights two important aspects of multilateralism: the role of nonstate actors and the importance of ideas. It bears out the observations of Judith Goldstein and Robert Keohane, that “ideas influence policy when the principles or causal beliefs they embody provide road maps that increase actors' clarity about goals or ends-means relationships, when they affect outcomes of strategic situations in which there is no unique equilibrium, and when they become embedded in political institutions.”¹⁷ Though certain US government experts and officials were extremely influential, it was primarily civil society, using a range of cognitive and advocacy tactics, that succeeded in repositioning the issue of scope from a debate among the P-5 over “activities not prohibited” to one about the purpose of a test ban, thereby shifting the payoff matrix from HNE thresholds towards zero yield.

In doing so, they expanded the zone of possible agreements to include a prohibition on HNEs that in 1994 had been thought impossible. This integrative convergence was largely determined by normative considerations, but also reflected institutional objectives: it strengthened the chances of concluding a treaty that would be acceptable to the NNWS and so reinforced the nonproliferation regime. This was important, for although they had achieved the indefinite extension of the NPT in 1995 without actually delivering a finished CTBT, the NPT agreements in 1995 and 2000 and the policies of the NWS' governments during this period showed continued support for multilateral institutions, with a CTBT still viewed as an important component of the nonproliferation regime. Although institutional norms, ideas and epistemic strategies were more influential in determining the scope outcome than power and fixed interests, realist considerations were not wholly swept aside. Both Chirac's decision to obtain simulation capabilities through testing and Clinton's imposition of the six safeguards and the massive budget for stockpile stewardship guaranteed to the US nuclear weapons establishment were conditioned on an understanding of regime cooperation as mitigating the security dilemma by constraining others without significantly diminishing one's own relative power and capabilities. Even so, the Republican opponents of CTBT ratification argued that the treaty weakened US arsenal and capabilities.

Finally it must be noted that though the scope outcome provides a good example of integrative convergence in all its complexity, the United States then exerted its position of dominance to impose its decision on the rest of the P-5 and ensure that this became the authoritative interpretation of the Australian scope text from then on.

Verification

Early on, a number of states, notably Russia, Australia and Mexico, as well as NGOs such as VERTIC, had argued that competent verification could be provided by a combination of national technical means and existing open seismic resources. Their position, which complemented the preference of Mexico and some of the nonaligned states for concluding the treaty before April 1995, was that the CTBT verification regime was essentially for multilateral confidence-building, and need not be very expensive or elaborately defined. Arguments for a less established verification system were dropped once the hope of an early treaty faded.

Apart from this divergence of perspective in the first year, there was little core conflict between the interests of the NWS and those of most NNWS with regard to the international monitoring system, though there were of course disagreements over specifics. Hence, IMS was the only negotiating outcome in this study to reflect Ruggie's principles of reciprocity, shared responsibilities and benefits, and nondiscrimination. Though there were differences in terms of technical expertise and opinion over capabilities and coverage, and some pursuit of narrow national interests over the supply of technologies and location of specific stations, these were resolved through epistemic strategies and bridging tactics aimed at depoliticising areas of contention. Disagreements were addressed with constructive, integrative multilateral approaches, and convergence largely achieved through cooperation, knowledge diffusion and the fostering of shared understandings about what would comprise a technically achievable, cost-effective system able to provide verification confidence and collateral benefits. The principal epistemic actor and strategist, Peter Marshall, was part of the UK government delegation, and civil society was hardly involved.

By contrast, questions relating to on-site inspections and the use of NTM tapped into concerns about sovereignty and espionage, particularly among states with declared or *de facto* nuclear programmes. These echoed the cold war dichotomy of adequacy versus bearability, but pitted the United States more sharply against China than Russia, with India, Israel and Pakistan seeking also to protect their national nuclear assets from surveillance or prying eyes. The middle power NNWS tried to be brokers and knowledge diffusers, but were only weakly engaged. The overall outcome was distributive, determined by the competing interests and requirements of the P-5 and D-3. Among the two main protagonists on OSI, China – which lacked the United States' economic and military power – bargained effectively on these issues, in part through exerting 'no-agreement' leverage, since it was important for the United States to have China join the CTBT from the very start. The final decision on OSI was a basic trade-off between China and the United States and imposed on the rest, who accepted. Civil society was much less engaged on verification issues in the 1994-96 CTB negotiations than in the past, mainly because verification was far less politicised this time around.

Awareness of the need to have a sufficiently robust verification and inspection regime toughened some US positions, as illustrated when Ambassador Ledogar opposed some less stringent proposals as “treaty breakers”. Nevertheless, it was thought that technical advances and the US-Soviet joint verification ventures of the 1980s¹⁸ had considerably weakened the power of ‘impossibilist’ verification arguments. These developments and the precedent set by the CWC negotiations on OSI and NTM made it appear that what Krasner identified as ‘usage and custom’ were moving in the direction of acceptance of verification norms in regime building. While this had a beneficial effect on the 1994-96 negotiations, where verification was nothing like the political stumbling block it had appeared during the cold war, it does not appear to have extended to US domestic politics.

Though less salient in the negotiations themselves, cold war doubts about verification and verifiability were revived by test ban opponents in the United States in their successful campaign to prevent Senate ratification of the CTBT in 1999.¹⁹ Their arguments, which also focused on the ability of the United States to maintain its nuclear arsenal under a test ban treaty, appeared to have taken the Clinton administration and many observers by surprise. The late 1990s were not, after all, the 1950s and 1960s, when highlighting verification problems had proved such a devastating weapon in the arms control opponents’ armoury.²⁰ Though regarded by many as ideologically motivated, the Republicans’ stated verification concerns were taken seriously by test ban advocates, who were at pains to describe the considerable efforts that had gone into providing a verification regime that would meet US intelligence requirements and provide confidence in treaty compliance. The leaders of three of the United States’ most important allies, Britain, France and Germany, devoted one fifth of their *New York Times* appeal on the eve of the Senate ratification debate to a defence of the treaty’s verification provisions.²¹

After the ratification debacle in October 1999, US governmental and nongovernmental arms controllers undertook studies and commissions to show how effective the CTB verification regime actually was.²² The Report from General John Shalikashvili, commissioned by President Clinton in January 2000 to consult with Senators and “lay the groundwork for future ratification of the treaty”, devoted considerable energy to proving how much the CTBT verification regime enhances US

security interests. Noting that “the value of a verification system extends well past the range where a monitor has high confidence of detecting, identifying, locating and attributing a violation, and down into the gray area where a potential evader lacks certainty about the likelihood of discovery”, the Shalikashvili report emphasised how the CTBT’s verification regime would be able to detect explosions of 10 t or lower at Russia’s Novaya Zemlya Test Site; global coverage below 500 t and much lower at all known test sites; the right to use national technical means to back up a request for an inspection; and so on.²³

Unfortunately, these laudable efforts to prove the worth of the CTBT’s verification provisions have missed the major political point. No verification system can provide 100 percent deterrence and detection. Yet that is essentially the standard against which the test ban opponents insist on comparing the CTB’s verification system. Unlike in the EIF case, these subsequent problems cannot be laid at the door of a bad agreement or suboptimal convergence. It is unlikely that many Republican Senators really believe that the verification deficits they complain about in the CTBT would actually leave the United States vulnerable. As the Bush administration has made explicit since assuming power in 2001, it is arms control that they oppose, and however comprehensive the verification regime, it would always be deemed to fall short.²⁴

Entry into Force

The entry-into-force negotiations were characterised by early neglect, on the assumption that the provision would fall into place once the ‘major’ political issues had been resolved. With few actors engaged in finding ways to facilitate convergence, the zone of agreement was restricted by the competing expectations and interests among the NWS and *de facto* possessors, and positions became hardened in the endgame. Three of the NWS – Britain, China and Russia – succeeding in forcing through a stringent entry-into-force provision for narrowly nonproliferation motivations. They were egged on by Pakistan who played the British ambassador with false promises to sign up to the treaty if India’s accession was made definite. Early in the CTB negotiations, India had been hedging its bets. The election in 1996 of the nationalist BJP government, determined to show that India was a nuclear power, cemented India’s opposition. Since the justification for India’s defection was

couched in disarmament rhetoric, the coercive, nonproliferation-targeted entry-into-force provision favoured by Britain, China, Russia and Pakistan provided a predictably contentious platform for a showdown that resulted in India not just walking away, but lumping the treaty in with the NPT as a discriminatory instrument of the big powers. With Israel in mind, Egypt, Iran and most Arab states also favoured a more stringent approach, though they would not have opposed conclusion of the treaty with a more flexible alternative.

High level political pressure from the United States might have made a difference, but Washington appeared disengaged, its attention elsewhere until the very end. Although France became supportive of a more flexible EIF approach in the final year, its power in the P-5 minilateral dynamics had weakened since changing its ambassador in 1995. The rest of the CD was largely in favour of a provision that would enable early entry into force, but they coordinated poorly on this issue and failed to unify around a credible alternative to Britain's proposals. Civil society likewise engaged very late and coordinated only weakly.

Politically viable alternatives on entry into force were available to the CD negotiators, not least of which were the precedents set by the NPT and CWC, but little or no pressure was coherently exerted in favour of a flexible option. No-one took on the knowledge and norm diffusing roles deployed so effectively by civil society and epistemic actors in shaping the zones of agreement for scope and verification. Arguably related to this absence, there was insufficient high level governmental and diplomatic attention until far too late. The Dutch delegation was left to resolve the issue, but there was little effective exertion of countervailing power to offset the combined pressure of Britain, China and Russia in favour of stringency. The determining factors were power and perceptions of national interest, particularly among P-5 and D-3 states with ambitions and either insecure or declining nuclear weapon status. The outcome was the worst kind of managed convergence: an unwieldy, unworkable provision, for which the chief justification was in meeting the September 1996 deadline for conclusion of the treaty.

Conclusions

As noted in Chapter 1, studies of post cold war multilateralism are sparse, and particularly where arms control is concerned, underdeveloped. Although it is important to recognise the distinctions between regime theory and multilateralism, they raise similar questions about the nature of cooperation. The relationship between multilateral processes and multilateral institutions, including regimes, is one of mutual reinforcement: the institutions and regimes are facilitated by sustained multilateral cooperation, while the establishment of effective institutions and regimes strengthens the credibility of multilateralism.

To the extent that the CTBT was negotiated in Geneva, it was a mixed-motive interaction, employing strategies of dominance, cooperation, collaboration, coordination and persuasion. Conflicting expectations were apparent from the beginning: the P-5 and D-3 prioritised their interests in sustaining their nuclear weapons programmes, relying largely on concession-trading to balance gains and losses, other negotiators focused on facilitating the legal and technical issues to get a sufficient treaty concluded by the target date of September 1996, and earlier if possible. Of more than 70 CD members and observers participating, the study shows that fewer than 25 states had significant impact on the outcome. The rest, comprising a large block of nonaligned states, were marginalised, though they emerged periodically to make statements about disarmament.

This thesis has demonstrated that, important as attributive power and the linkage between nuclear interests and expectations proved to be, they did not determine outcomes to the extent that realists or neoliberals would have predicted. While nuclear interests were a major factor in determining a state's expectations and negotiating posture, other factors were important in reaching convergence. These factors included: knowledge and ideas; civil society engagement; norms and regime values; partnerships and alliances; internal policy cohesion or division; the level of domestic and international political attention and support. By choosing to incorporate transnational civil society as a principal unit of analysis, along with states, the thesis has contributed to a fuller understanding of how states' calculations of what

constitutes self-interest and security can be influenced, shaped and expanded, opening up alternative solutions for agreement than initially envisaged.

By considering the negotiations on scope, verification and entry into force separately, the thesis has illuminated aspects of negotiations and convergence that are underrepresented in other, less substantial overviews of treaty negotiations. The first two sections of Chapter 9 have shown that in cooperation scenarios where the forum, structure and parties (assumed in rationalist theory to have stable interests and expectations) are the same, the dynamics of convergence on particular issues may be quite different, indicating the importance of other variables. Managed convergence was found to be more likely on issues that were considered to be of high value to only a small number of states, such as OSI and entry into force, and which did not appear politically significant to the majority until the endgame. In addition to highlighting that managed solutions tend to split differences, foster compromise at the level of the lowest common denominator, or defer to the most powerful in the distribution of benefits and constraints, the thesis suggests there may be longer term negative consequences. Agreement may be achieved, but at high cost to regime interests.

Negotiations that incorporated norm-sharing and compromise, as well as concessions-trading were more likely to bring about regime-enhancing convergence. Related to this, constructive concessions are more likely when there are vested interests in a successful outcome.²⁵ One of the major problems for entry into force was that the narrow interests of certain NWS that wanted primarily to curb the D-3 were very forcefully exerted. India was not the only state to prefer a 'no-agreement' outcome. UK leverage over entry into force was amplified because its ambassador appeared willing to take the treaty to the brink, suggesting that a no-agreement alternative would not have been unpalatable to the Conservative government, although the strategic imperative of the Atlantic Alliance ensured that Britain did not openly work against American wishes. By contrast, the United States and middle powers kept asserting their flexibility on the issue. By failing to perceive and assert their regime interests as strongly as they would no doubt have sought to fulfil perceived national interests, these negotiators acquiesced in a managed convergence that undermined regime *and* national interests by placing unnecessary barriers in the way of the treaty's entry into force.

The study on scope shows a very different dynamic, where cognitive and advocacy strategies shaped understandings and norms and enabled parties with relatively little attributive power to maximise disarmament benefits over narrow nonproliferation interests. This was accomplished by redrawing the zone of possible agreements, enabling an integrative solution that cut through the distributive disagreements among the P-5. The zero yield decision could not be adequately explained if these factors and processes were omitted from analysis.

In analysing the strategies employed and the processes entailed in different kinds of convergence, this CTBT study bears out much of Sebenius' analysis with regard to the potential of integrative agreements to increase mutual benefits and offset the differential advantages of powerful actors with respect to the distribution of gains.²⁶ With some reservations, it also accords with the observations of Haas, Adler, Sebenius, Nadelmann, Price, Florini *et al*, regarding the role of transnational civil society, norm entrepreneurs and epistemic actors in constructing political will and shaping interests.²⁷

In the case of the CTBT, most specialists viewed as having authoritative knowledge about nuclear science or verification were either government employees or had served for part of their career in their countries' nuclear laboratories or establishments. Although some became formidable advocates, there was little evidence of an epistemic community *per se*. This thesis contends, rather, that there were epistemic *actors*, some of whom formed networks, but that they did not necessarily have a commonality of purpose as implied in the concept of a community. Governments or pressure groups called on the scientists' knowledge and expertise to give authority to arguments for or against a proposed approach or provision for the treaty. Epistemic actors and networks operated not only in a domestic policy environment, but were found to be transnational, spanning national and international borders and the boundaries between the governmental and nongovernmental spheres.²⁸

In addition to civil society pressure, influential actors in the defence and nuclear agencies of the NWS at times pursued agendas that competed with or undermined policies being taken forward by the executive branch, foreign ministries or other

departments. To strengthen their domestic and international bargaining positions, transgovernmental alliances were sometimes forged between the defence and nuclear establishments of some of the NWS.²⁹

Robert Putnam characterised foreign policy as a two-level game, played simultaneously on the domestic and international levels, with interaction and mutual shaping of agendas, options and interests.³⁰ Putnam identified international bargaining between negotiators as level I, and separate bargaining among domestic constituents, agencies, interest-groups etc as level II, but this division fails to account for the complex domestic and transboundary interactions and influence of government officials, epistemic actors and civil society. Offering an alternative formulation of domestic/international interactions that he calls a “three-and-three analysis”, Jeffrey Knopf places emphasis on three forms of transboundary interaction: transgovernmental, involving collaboration or collusion between officials from different states; transnational, defined as links between domestic actors from different states; and cross-level, where interaction takes place between governmental and nongovernmental actors from different states.³¹ Knopf also incorporated alliances as the third level of analysis (the first two being domestic and international) in transboundary interactions.³² Where Putnam’s two-level analysis provided a useful representation of the domestic/international dynamic in the more restricted, binary relations of the cold war, Knopf’s three-and-three formulation accords better with the complex interactions revealed in this CTBT study, suggesting an area for further fertile research.

Hampson’s case that “the hallmark of multilateral diplomacy”³³ is that it is conducted between groups and coalitions, is overstated, although it is accepted that alliances would be rational for less powerful states “so that they stand a better chance of obtaining a desired outcome or of controlling others not included in the coalition.”³⁴ The study supports his contention that banding together, pooling resources and forming “bargaining units” can enable weak actors to facilitate communication and information-sharing, simplify bargaining procedures and “compensate for structural weaknesses in asymmetric bargaining situations”.³⁵ However, in the CTBT negotiations, the formal CD groups were poor, less-than-productive instruments for representing interests, coordinating strategies or managing decision-making. Apart

from the P-5 minilateral negotiations³⁶, group behaviour was seldom relevant in the substantive negotiations, despite considerable incentives to reduce variables, complexity and uncertainty. In analysing alliances as a factor in convergence, this thesis highlights instead the effectiveness (or absence, as in the EIF case) of informal, transient alliances (among middle powers, or between a few individual states and civil society actors, for example) with specific objectives, strategies and temporary coordination. As illustrated in the landmines case and CTBT scope, alliances are most likely to be effective in augmenting the power of smaller states to shape negotiating outcomes if they are coordinated around cognitive, knowledge-sharing and norm-promoting strategies.

Based as it is on a single case study, this thesis is necessarily limited in the conclusions it can properly draw, but the findings help to indicate areas for further research and consideration. Positivism expects theoretical consistency, but it appeared from the CTBT negotiations that three games with three different sets of theoretical assumptions and rules were being simultaneously played, not only in the international arena, but in domestic foreign policy formation and transboundary interactions. Furthermore, in addition to the factors identified by Krasner and Hampson, different actors were tailoring their strategies in accordance with whether they viewed the test ban negotiations (as cooperation scenario) through a realist, neoliberal or new multilateralist lens.³⁷ This observation might partly explain the thesis finding that unless civil society or epistemic actors were actively engaged in promoting integrative strategies and solutions, the majority of states tended to acquiesce in suboptimal distributive outcomes. One reason for this, which it was not possible to explore within the framework of the present thesis, might be that the generally realist assumptions embedded in the education available to diplomats in most countries exclude many of the factors this study has shown to be influential. As a consequence, few diplomats and policy-makers are trained to perceive (let alone work for) integrative outcomes, even though integrative convergence is more likely to enable less powerful states to increase mutual gains (and enhance regime interests). An interesting research programme might therefore be a series of studies at the three levels identified by Knopf, investigating the links and contradictions between interests, policy-formation and negotiating postures, with consideration of the genesis of state and nonstate actors' theoretical assumptions, perceptions of the problem and

assessment of their interests with regard to that problem and its zone of possible solutions.

In conclusion, this thesis finds that the realist and neoliberal approaches of traditional regime theory are limited by their failure to distinguish between distributive and integrative convergence, and by inadequate theories of civil society. New multilateralism, on the other hand, is limited by its failure to address why many actors, particularly among states, exclude or fail to recognise integrative potential, a lacuna that civil society currently (but often inadequately) tries to fill. Ruggie's principles, which might hold true for trade or other issues, are far from adequate when applied to multilateral arms control; much more needs to be done to develop a theory of multilateralism that encompasses security and arms control.

For realists and neoliberals, multilateralism in self-interested anarchy is the art of the possible, bounded by relative power and interests. For new multilateralists seeking solutions to global security problems, multilateralism is about widening the possibilities, offsetting dominant power and reframing interests to achieve collective benefits. These approaches appear to coexist in multilateral negotiations, and the interaction between them is a factor in convergence that requires further exploration.

Illustrating examples of failure as well as success in attempts to reach regime-building convergence, it is hoped that this CTBT study has contributed to a better understanding of the processes and mechanisms of convergence, and especially the ways in which actors without high levels of attributive power can influence negotiating outcomes on important issues. The thesis opened with Fen Hampson's question about how and why it is possible for multilateral negotiations ever to succeed.³⁸ An important part of the answer can be found in the observation by Peter Haas and Emanuel Adler that political process is about "who learns what, when, to whose benefit, and why".³⁹

Notes

¹ President William J. Clinton, address to the United Nations General Assembly, September 24, 1996.

² Accepting NPT language that characterised disarmament as an 'ultimate goal' of the nonproliferation regime only slightly masked that the NWS actually considered disarmament to be remote, unachievable and, in real terms, undesirable.

³ In the case of landmines, for instance, states like Finland, that regarded the role of landmines on its border with Russia as irreplaceable, had stronger direct interests than France, which possessed landmines, but did not rely on them to the same degree.

⁴ See, for example, *Perception and Misperception in International Politics* (Princeton NJ: Princeton University Press, 1976).

⁵ Interestingly, Hampson concluded that crisis was less relevant in multilateral negotiations on trade than for arms control or the environment. Fen Osler Hampson with Michael Hart, *Multilateral Negotiations: Lessons from Arms Control, Trade and the Environment* (Baltimore and London: The Johns Hopkins University Press, 1995).

⁶ Michael Evans, "Britain ends 40 years of nuclear test explosions", *The Times*, April 7, 1995.

⁷ On the argument that because of technical problems, France has learned less from its nuclear tests than the United States, see "France keeps the experts guessing", *Nature*, vol. 376, July 27, 1995. For an alternative view on the relative independence of French nuclear development, see William Drozdiak and R. Jeffrey Smith, "French Nuclear Program Closely Tied to U.S." *Washington Post*, September 19, 1995.

⁸ Marie-Hélène Labbé, "France", in Eric Arnett (ed.) *Nuclear Weapons After the Comprehensive Test Ban* (Oxford: Oxford University Press/SIPRI, 1996) p 33.

⁹ Labbé, 1996, p 35.

¹⁰ In particular, the interests of the *Direction des applications militaires* (DAM, the Office of Military Applications) must be taken into consideration. Caught off guard by Mitterrand's decision to declare a nuclear test moratorium in April 1992, DAM feared losing resources, staffing and expertise. The French nuclear establishment became concerned for its future, fearing that it would come under domestic political and economic pressure to close down the test facilities at Moruroa and Fangataufa if a CTBT did not contain some provisions justifying the retention of the test site, either through periodic safety tests or by permitting hydronuclear testing at yields high enough to require specially constructed and reinforced facilities. Their fear was well founded, for after acceding to the CTBT, France closed the Pacific Test Site and undertook clean-up programmes with IAEA assistance and oversight. France's options were further constrained because the Clinton administration had already rejected a 1 kt threshold and appeared adamantly opposed to the high level of threshold that France's weaponeers wanted. See Labbé, 1996, pp 37-38.

¹¹ Gérard Errera, conversation with the author, quoted in Rebecca Johnson, ACRONYM 6, (April 1995), p 10.

¹² Unlike the CD, which works according to the rule of consensus, the NPT specified that the decision on the extension of the NPT could be taken by a simple majority of states parties, with each state having a vote of equal value. The NWS knew that they would need something to show, as from past NPT Review Conferences it was clear that progress on nuclear disarmament would be an important factor for many of the NNWS whose votes they needed to win. In addition to abandoning the unpopular Franco-British proposal for safety tests, the NWS undertook several other initiatives to win favour among the marginalised NNWS. See Rebecca Johnson, *Indefinite Extension of the Non-Proliferation Treaty: Risks and Reckonings*, ACRONYM 7, (London: The Acronym Consortium, September 1995), pp 40-42. Michael Evans, "Britain ends 40 years of nuclear test explosions", *The Times* (April 7, 1995).

¹³ Writing several years after conclusion of the CTBT negotiations, Jing-Dong Yuan backs up this observation with an assessment that China's positions revolved around two issues: PNEs and verification. Jing-Dong Yuan, "Culture Matters: Chinese Approaches to Arms Control and Disarmament", in Keith R. Krause, *Culture and Security: Multilateralism, Arms Control and Security Building* (London: Frank Cass, 1999), p 110.

¹⁴ Ibid.

¹⁵ Hampson, 1995, especially pp 34-36 and 350-351.

¹⁶ Peter M. Haas (ed.), *Knowledge, Power and International Policy Coordination*, (Columbia, SC: University of South Carolina Press, 1992).

¹⁷ Judith Goldstein and Robert O. Keohane, "Ideas and Foreign Policy" in Paul R. Viotti and Mark V. Kauppi, *International Relations Theory*, Third Edition, (Boston: Allyn and Bacon, 1987), p 297.

¹⁸ The joint verification experiments started as nongovernmental exchanges initiated by the Soviet Academy of Sciences and NRDC and were then taken over for confidence-building purposes by the two governments. See Chapter 3.

¹⁹ For example, Senator Richard Lugar (Republican from Indiana) raised concerns about the continuing safety of the US stockpile and stated: "I have little confidence that the verification and enforcement provisions will dissuade other nations from nuclear testing." "Senator Lugar's statement announcing his opposition to CTBT", *United States Information Service*, October 12, 1999. See Daryl Kimball, "How the US Senate Rejected CTBT Ratification", *Disarmament Diplomacy* 40, (September/October 1999), pp 8-15.

²⁰ See Nancy W. Gallagher, (ed.), *Arms Control: New Approaches to Theory and Policy*, (London: Frank Cass, 1998).

²¹ Tony Blair, Jacques Chirac and Gerhard Schroeder, "A Treaty We All Need", *New York Times*, October 8, 1999, quoted at the beginning of chapter 7.

²² The most comprehensive of the nongovernmental studies was the Independent Commission on the Verifiability of the CTBT, carried out under the auspices of VERTIC. See *Final Report, Independent Commission on the Verifiability of the CTBT* (London: VERTIC, 2000).

²³ General John M. Shalikashvili, "Report on the Findings and Recommendations Concerning the Comprehensive Nuclear Test Ban Treaty", *Arms Control Today*, (January/February 2001), pp 18-28, especially p 21.

²⁴ This perception is reinforced by the lack of Republican objections to the George W. Bush-driven US-Russian Strategic Offensive Reductions Treaty (SORT, also called the Moscow Treaty, May 24, 2002), despite the fact that it has no formal verification or monitoring provisions, unlike the detailed verification and counting requirements of START II, which it supplants.

²⁵ See, for example, Hampson, 1995; and Dean G. Pruitt, *Negotiation Behaviour*, (New York: Academic Press, 1981).

²⁶ See James K. Sebenius, "Challenging conventional explanations of international cooperation: negotiation analysis and the case of epistemic communities" in Peter M. Haas, *Knowledge, Power, and International Policy Coordination*, (Columbia SC: University of South Carolina Press, 1992), pp 323-365; especially pp 332-335.

²⁷ Peter M. Haas, (ed), *Knowledge, Power and International Policy Coordination*, (Columbia, SC: University of South Carolina Press, 1992); Emanuel Adler, "The emergence of cooperation: national epistemic communities and the international evolution of the idea of nuclear arms control", in Haas, 1992 pp 101-145; Sebenius, 1992; Ethan A. Nadelmann, "Global prohibition regimes: the evolution of norms in international society", *International Organization* 44:4 (1990), pp 479-526; Richard Price, "Reversing the Gun Sights: Transnational Civil Society Targets Landmines", *International Organization* 53:3 (1998) pp 613-644; and Ann M. Florini (ed.), *The Third Force: The Rise of Transnational Civil Society*, (Tokyo: Japan Center for International Exchange and Washington D.C. Carnegie Endowment for International Peace, 2000). This thesis also provides evidence Hampson lacked, when on the basis of his limited case studies he concluded that "consensual knowledge", fostered through civil society experts and epistemic communities was central in the environmental case studies, but less clearly a determinant in the arms control and trade negotiations. Hampson, 1995.

²⁸ This was noted by Adler, 1992, who stopped short of challenging Haas' concept of epistemic communities with the epistemic networks that he actually observed.

²⁹ This is discussed especially in Chapters 4 and 6. See the chapters on China, France, India, Russia, the United Kingdom and the United States, in Eric Arnett (ed.), *Nuclear Weapons After the Comprehensive Test Ban*, (Oxford: Oxford University Press/SIPRI, 1996).

³⁰ Robert D. Putnam, "Diplomacy and domestic politics: the logic of two-level games", *International Organization* 42:3 (1988) pp 427-460. See also the essays in Peter B. Evans, Harold K. Jacobson, and Robert D. Putnam, *Double Edged Diplomacy: International Bargaining and Domestic Politics* (Berkeley CA: University of California Press, 1993).

³¹ Jeffrey W. Knopf, "Beyond two-level games: domestic-international interaction in the intermediate-range nuclear forces negotiation", *International Organization* 47:4 (1993) pp 599-628.

³² Ibid.

³³ Hampson, 1995, p 5.

³⁴ Jeffrey Rubin and Bert Brown, quoted in Hampson, 1995, p 28.

³⁵ Hampson, 1995, pp 28-42.

³⁶ It should be noted that Miles Kahler also discussed minilateral groups of less powerful states acting as a "broker" in negotiations or as a "progressive club within a club". Kahler, 1993, pp 295-326 (quotes on p 296 and p 320). Neither Knopf, who used NATO as his example, nor Kahler make clear

whether they draw a distinction between the role of issue-based minilateral groupings that unite to achieve certain agreed objectives and the role of regional, issue-coordinating (but not issue-based) groups such as the European Union, though both would be consistent with their theses.

³⁷ This does not mean they recognised these distinctions themselves or would have used the terms, with the possible exception of realism, the assumptions of which are sufficiently dominant to have entered diplomatic parlance.

³⁸ Hampson, 1995, p 352.

³⁹ Emanuel Adler and Peter M. Haas, "Conclusion: epistemic communities, world order, and the creation of a reflective research program", in Haas, 1992, p 370.

APPENDIX

COMPREHENSIVE NUCLEAR-TEST-BAN TREATY

PREAMBLE

The States Parties to this Treaty (hereinafter referred to as "the States Parties"),

Welcoming the international agreements and other positive measures of recent years in the field of nuclear disarmament, including reductions in arsenals of nuclear weapons, as well as in the field of the prevention of nuclear proliferation in all its aspects,

Underlining the importance of the full and prompt implementation of such agreements and measures,

Convinced that the present international situation provides an opportunity to take further effective measures towards nuclear disarmament and against the proliferation of nuclear weapons in all its aspects, and declaring their intention to take such measures,

Stressing therefore the need for continued systematic and progressive efforts to reduce nuclear weapons globally, with the ultimate goal of eliminating those weapons, and of general and complete disarmament under strict and effective international control,

Recognizing that the cessation of all nuclear weapon test explosions and all other nuclear explosions, by constraining the development and qualitative improvement of nuclear weapons and ending the development of advanced new types of nuclear weapons, constitutes an effective measure of nuclear disarmament and non-proliferation in all its aspects,

Further recognizing that an end to all such nuclear explosions will thus constitute a meaningful step in the realization of a systematic process to achieve nuclear disarmament,

Convinced that the most effective way to achieve an end to nuclear testing is through the conclusion of a universal and internationally and effectively verifiable comprehensive nuclear test-ban treaty, which has long been one of the highest priority objectives of the international community in the field of disarmament and non-proliferation,

Noting the aspirations expressed by the Parties to the 1963 Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water to seek to achieve the discontinuance of all test explosions of nuclear weapons for all time,

Noting also the views expressed that this Treaty could contribute to the protection of the environment,

Affirming the purpose of attracting the adherence of all States to this Treaty and its objective to contribute effectively to the prevention of the proliferation of nuclear weapons in all its aspects, to the process of nuclear disarmament and therefore to the enhancement of international peace and security,

Have agreed as follows:

ARTICLE I

BASIC OBLIGATIONS

1. Each State Party undertakes not to carry out any nuclear weapon test explosion or any other nuclear explosion, and to prohibit and prevent any such nuclear explosion at any place under its jurisdiction or control.
2. Each State Party undertakes, furthermore, to refrain from causing, encouraging, or in any way participating in the carrying out of any nuclear weapon test explosion or any other nuclear explosion.

ARTICLE II

THE ORGANIZATION

A. GENERAL PROVISIONS

1. The States Parties hereby establish the Comprehensive Nuclear Test-Ban Treaty Organization (hereinafter referred to as "the Organization") to achieve the object and purpose of this Treaty, to ensure the implementation of its provisions, including those for international verification of compliance with it, and to provide a forum for consultation and cooperation among States Parties.
2. All States Parties shall be members of the Organization. A State Party shall not be deprived of its membership in the Organization.
3. The seat of the Organization shall be Vienna, Republic of Austria.
4. There are hereby established as organs of the Organization: the Conference of the States Parties, the Executive Council and the Technical Secretariat, which shall include the International Data Centre.
5. Each State Party shall cooperate with the Organization in the exercise of its functions in accordance with this Treaty. States Parties shall consult, directly among themselves, or through the Organization or other appropriate international procedures, including procedures within the framework of the United Nations and in accordance with its Charter, on any matter which may be raised relating to the object and purpose, or the implementation of the provisions, of this Treaty.
6. The Organization shall conduct its verification activities provided for under this Treaty in the least intrusive manner possible consistent with the timely and efficient accomplishment of their objectives. It shall request only the information and data necessary to fulfil its responsibilities under this Treaty. It shall take every precaution to protect the confidentiality of information on civil and military activities and facilities coming to its knowledge in the implementation of this Treaty and, in particular, shall abide by the confidentiality provisions set forth in this Treaty.
7. Each State Party shall treat as confidential and afford special handling to information and data that it receives in confidence from the Organization in connection with the implementation of this Treaty. It shall treat such information and data exclusively in connection with its rights and obligations under this Treaty.

8. The Organization, as an independent body, shall seek to utilize existing expertise and facilities, as appropriate, and to maximize cost efficiencies, through cooperative arrangements with other international organizations such as the International Atomic Energy Agency. Such arrangements, excluding those of a minor and normal commercial and contractual nature, shall be set out in agreements to be submitted to the Conference of the States Parties for approval.
9. The costs of the activities of the Organization shall be met annually by the States Parties in accordance with the United Nations scale of assessments adjusted to take into account differences in membership between the United Nations and the Organization.
10. Financial contributions of States Parties to the Preparatory Commission shall be deducted in an appropriate way from their contributions to the regular budget.
11. A member of the Organization which is in arrears in the payment of its assessed contribution to the Organization shall have no vote in the Organization if the amount of its arrears equals or exceeds the amount of the contribution due from it for the preceding two full years. The Conference of the States Parties may, nevertheless, permit such a member to vote if it is satisfied that the failure to pay is due to conditions beyond the control of the member.

B. THE CONFERENCE OF THE STATES PARTIES

Composition, Procedures and Decision-making

12. The Conference of the States Parties (hereinafter referred to as "the Conference") shall be composed of all States Parties. Each State Party shall have one representative in the Conference, who may be accompanied by alternates and advisers.
13. The initial session of the Conference shall be convened by the Depositary no later than 30 days after the entry into force of this Treaty.
14. The Conference shall meet in regular sessions, which shall be held annually, unless it decides otherwise.
15. A special session of the Conference shall be convened:
 - (a) When decided by the Conference;
 - (b) When requested by the Executive Council; or
 - (c) When requested by any State Party and supported by a majority of the States Parties.

The special session shall be convened no later than 30 days after the decision of the Conference, the request of the Executive Council, or the attainment of the necessary support, unless specified otherwise in the decision or request.

16. The Conference may also be convened in the form of an Amendment Conference, in accordance with Article VII.

17. The Conference may also be convened in the form of a Review Conference, in accordance with Article VIII.
18. Sessions shall take place at the seat of the Organization unless the Conference decides otherwise.
19. The Conference shall adopt its rules of procedure. At the beginning of each session, it shall elect its President and such other officers as may be required. They shall hold office until a new President and other officers are elected at the next session.
20. A majority of the States Parties shall constitute a quorum.
21. Each State Party shall have one vote.
22. The Conference shall take decisions on matters of procedure by a majority of members present and voting. Decisions on matters of substance shall be taken as far as possible by consensus. If consensus is not attainable when an issue comes up for decision, the President of the Conference shall defer any vote for 24 hours and during this period of deferment shall make every effort to facilitate achievement of consensus, and shall report to the Conference before the end of this period. If consensus is not possible at the end of 24 hours, the Conference shall take a decision by a two-thirds majority of members present and voting unless specified otherwise in this Treaty. When the issue arises as to whether the question is one of substance or not, that question shall be treated as a matter of substance unless otherwise decided by the majority required for decisions on matters of substance.
23. When exercising its function under paragraph 26 (k), the Conference shall take a decision to add any State to the list of States contained in Annex 1 to this Treaty in accordance with the procedure for decisions on matters of substance set out in paragraph 22. Notwithstanding paragraph 22, the Conference shall take decisions on any other change to Annex 1 to this Treaty by consensus.

Powers and Functions

24. The Conference shall be the principal organ of the Organization. It shall consider any questions, matters or issues within the scope of this Treaty, including those relating to the powers and functions of the Executive Council and the Technical Secretariat, in accordance with this Treaty. It may make recommendations and take decisions on any questions, matters or issues within the scope of this Treaty raised by a State Party or brought to its attention by the Executive Council.
25. The Conference shall oversee the implementation of, and review compliance with, this Treaty and act in order to promote its object and purpose. It shall also oversee the activities of the Executive Council and the Technical Secretariat and may issue guidelines to either of them for the exercise of their functions.
26. The Conference shall:
 - (a) Consider and adopt the report of the Organization on the implementation of this Treaty and the annual programme and budget of the Organization, submitted by the Executive Council, as well as consider other reports;
 - (b) Decide on the scale of financial contributions to be paid by States Parties in accordance with paragraph 9;

- (c) Elect the members of the Executive Council;
- (d) Appoint the Director-General of the Technical Secretariat (hereinafter referred to as "the Director-General");
- (e) Consider and approve the rules of procedure of the Executive Council submitted by the latter;
- (f) Consider and review scientific and technological developments that could affect the operation of this Treaty. In this context, the Conference may direct the Director-General to establish a Scientific Advisory Board to enable him or her, in the performance of his or her functions, to render specialized advice in areas of science and technology relevant to this Treaty to the Conference, to the Executive Council, or to States Parties. In that case, the Scientific Advisory Board shall be composed of independent experts serving in their individual capacity and appointed, in accordance with terms of reference adopted by the Conference, on the basis of their expertise and experience in the particular scientific fields relevant to the implementation of this Treaty;
- (g) Take the necessary measures to ensure compliance with this Treaty and to redress and remedy any situation that contravenes the provisions of this Treaty, in accordance with Article V;
- (h) Consider and approve at its initial session any draft agreements, arrangements, provisions, procedures, operational manuals, guidelines and any other documents developed and recommended by the Preparatory Commission;
- (i) Consider and approve agreements or arrangements negotiated by the Technical Secretariat with States Parties, other States and international organizations to be concluded by the Executive Council on behalf of the Organization in accordance with paragraph 38 (h);
- (j) Establish such subsidiary organs as it finds necessary for the exercise of its functions in accordance with this Treaty; and
- (k) Update Annex 1 to this Treaty, as appropriate, in accordance with paragraph 23.

C. THE EXECUTIVE COUNCIL

Composition, Procedures and Decision-making

27. The Executive Council shall consist of 51 members. Each State Party shall have the right, in accordance with the provisions of this Article, to serve on the Executive Council.

28. Taking into account the need for equitable geographical distribution, the Executive Council shall comprise:

- (a) Ten States Parties from Africa;
- (b) Seven States Parties from Eastern Europe;
- (c) Nine States Parties from Latin America and the Caribbean;
- (d) Seven States Parties from the Middle East and South Asia;

- (e) Ten States Parties from North America and Western Europe; and
- (f) Eight States Parties from South-East Asia, the Pacific and the Far East.

All States in each of the above geographical regions are listed in Annex 1 to this Treaty. Annex 1 to this Treaty shall be updated, as appropriate, by the Conference in accordance with paragraphs 23 and 26 (k). It shall not be subject to amendments or changes under the procedures contained in Article VII.

29. The members of the Executive Council shall be elected by the Conference. In this connection, each geographical region shall designate States Parties from that region for election as members of the Executive Council as follows:

(a) At least one-third of the seats allocated to each geographical region shall be filled, taking into account political and security interests, by States Parties in that region designated on the basis of the nuclear capabilities relevant to the Treaty as determined by international data as well as all or any of the following indicative criteria in the order of priority determined by each region:

- (i) Number of monitoring facilities of the International Monitoring System;
- (ii) Expertise and experience in monitoring technology; and
- (iii) Contribution to the annual budget of the Organization;

(b) One of the seats allocated to each geographical region shall be filled on a rotational basis by the State Party that is first in the English alphabetical order among the States Parties in that region that have not served as members of the Executive Council for the longest period of time since becoming States Parties or since their last term, whichever is shorter. A State Party designated on this basis may decide to forgo its seat. In that case, such a State Party shall submit a letter of renunciation to the Director-General, and the seat shall be filled by the State Party following next-in-order according to this sub-paragraph; and

(c) The remaining seats allocated to each geographical region shall be filled by States Parties designated from among all the States Parties in that region by rotation or elections.

30. Each member of the Executive Council shall have one representative on the Executive Council, who may be accompanied by alternates and advisers.

31. Each member of the Executive Council shall hold office from the end of the session of the Conference at which that member is elected until the end of the second regular annual session of the Conference thereafter, except that for the first election of the Executive Council, 26 members shall be elected to hold office until the end of the third regular annual session of the Conference, due regard being paid to the established numerical proportions as described in paragraph 28.

32. The Executive Council shall elaborate its rules of procedure and submit them to the Conference for approval.

33. The Executive Council shall elect its Chairman from among its members.

34. The Executive Council shall meet for regular sessions. Between regular sessions it shall meet as may be required for the fulfilment of its powers and functions.

35. Each member of the Executive Council shall have one vote.

36. The Executive Council shall take decisions on matters of procedure by a majority of all its members. The Executive Council shall take decisions on matters of substance by a two-thirds majority of all its members unless specified otherwise in this Treaty. When the issue arises as to whether the question is one of substance or not, that question shall be treated as a matter of substance unless otherwise decided by the majority required for decisions on matters of substance.

Powers and Functions

37. The Executive Council shall be the executive organ of the Organization. It shall be responsible to the Conference. It shall carry out the powers and functions entrusted to it in accordance with this Treaty. In so doing, it shall act in conformity with the recommendations, decisions and guidelines of the Conference and ensure their continuous and proper implementation.

38. The Executive Council shall:

(a) Promote effective implementation of, and compliance with, this Treaty;

(b) Supervise the activities of the Technical Secretariat;

(c) Make recommendations as necessary to the Conference for consideration of further proposals for promoting the object and purpose of this Treaty;

(d) Cooperate with the National Authority of each State Party;

(e) Consider and submit to the Conference the draft annual programme and budget of the Organization, the draft report of the Organization on the implementation of this Treaty, the report on the performance of its own activities and such other reports as it deems necessary or that the Conference may request;

(f) Make arrangements for the sessions of the Conference, including the preparation of the draft agenda;

(g) Examine proposals for changes, on matters of an administrative or technical nature, to the Protocol or the Annexes thereto, pursuant to Article VII, and make recommendations to the States Parties regarding their adoption;

(h) Conclude, subject to prior approval of the Conference, agreements or arrangements with States Parties, other States and international organizations on behalf of the Organization and supervise their implementation, with the exception of agreements or arrangements referred to in subparagraph (i);

(i) Approve and supervise the operation of agreements or arrangements relating to the implementation of verification activities with States Parties and other States; and

(j) Approve any new operational manuals and any changes to the existing operational manuals that may be proposed by the Technical Secretariat.

39. The Executive Council may request a special session of the Conference.

40. The Executive Council shall:

- (a) Facilitate cooperation among States Parties, and between States Parties and the Technical Secretariat, relating to the implementation of this Treaty through information exchanges;
- (b) Facilitate consultation and clarification among States Parties in accordance with Article IV; and
- (c) Receive, consider and take action on requests for, and reports on, on-site inspections in accordance with Article IV.

41. The Executive Council shall consider any concern raised by a State Party about possible non-compliance with this Treaty and abuse of the rights established by this Treaty. In so doing, the Executive Council shall consult with the States Parties involved and, as appropriate, request a State Party to take measures to redress the situation within a specified time. To the extent that the Executive Council considers further action to be necessary, it shall take, inter alia, one or more of the following measures:

- (a) Notify all States Parties of the issue or matter;
- (b) Bring the issue or matter to the attention of the Conference;
- (c) Make recommendations to the Conference or take action, as appropriate, regarding measures to redress the situation and to ensure compliance in accordance with Article V.

D. THE TECHNICAL SECRETARIAT

42. The Technical Secretariat shall assist States Parties in the implementation of this Treaty. The Technical Secretariat shall assist the Conference and the Executive Council in the performance of their functions. The Technical Secretariat shall carry out the verification and other functions entrusted to it by this Treaty, as well as those functions delegated to it by the Conference or the Executive Council in accordance with this Treaty. The Technical Secretariat shall include, as an integral part, the International Data Centre.

43. The functions of the Technical Secretariat with regard to verification of compliance with this Treaty shall, in accordance with Article IV and the Protocol, include inter alia:

- (a) Being responsible for supervising and coordinating the operation of the International Monitoring System;
- (b) Operating the International Data Centre;
- (c) Routinely receiving, processing, analysing and reporting on International Monitoring System data;
- (d) Providing technical assistance in, and support for, the installation and operation of monitoring stations;

(e) Assisting the Executive Council in facilitating consultation and clarification among States Parties;

(f) Receiving requests for on-site inspections and processing them, facilitating Executive Council consideration of such requests, carrying out the preparations for, and providing technical support during, the conduct of on-site inspections, and reporting to the Executive Council;

(g) Negotiating agreements or arrangements with States Parties, other States and international organizations and concluding, subject to prior approval by the Executive Council, any such agreements or arrangements relating to verification activities with States Parties or other States; and

(h) Assisting the States Parties through their National Authorities on other issues of verification under this Treaty.

44. The Technical Secretariat shall develop and maintain, subject to approval by the Executive Council, operational manuals to guide the operation of the various components of the verification regime, in accordance with Article IV and the Protocol. These manuals shall not constitute integral parts of this Treaty or the Protocol and may be changed by the Technical Secretariat subject to approval by the Executive Council. The Technical Secretariat shall promptly inform the States Parties of any changes in the operational manuals.

45. The functions of the Technical Secretariat with respect to administrative matters shall include:

(a) Preparing and submitting to the Executive Council the draft programme and budget of the Organization;

(b) Preparing and submitting to the Executive Council the draft report of the Organization on the implementation of this Treaty and such other reports as the Conference or the Executive Council may request;

(c) Providing administrative and technical support to the Conference, the Executive Council and other subsidiary organs;

(d) Addressing and receiving communications on behalf of the Organization relating to the implementation of this Treaty; and

(e) Carrying out the administrative responsibilities related to any agreements between the Organization and other international organizations.

46. All requests and notifications by States Parties to the Organization shall be transmitted through their National Authorities to the Director-General. Requests and notifications shall be in one of the official languages of this Treaty. In response the Director-General shall use the language of the transmitted request or notification.

47. With respect to the responsibilities of the Technical Secretariat for preparing and submitting to the Executive Council the draft programme and budget of the Organization, the Technical Secretariat shall determine and maintain a clear accounting of all costs for each facility established as part of the International Monitoring System. Similar treatment in the draft programme and budget shall be accorded to all other activities of the Organization.

48. The Technical Secretariat shall promptly inform the Executive Council of any problems that have arisen with regard to the discharge of its functions that have come to its notice in the performance of its activities and that it has been unable to resolve through consultations with the State Party concerned.

49. The Technical Secretariat shall comprise a Director-General, who shall be its head and chief administrative officer, and such scientific, technical and other personnel as may be required. The Director-General shall be appointed by the Conference upon the recommendation of the Executive Council for a term of four years, renewable for one further term, but not thereafter. The first Director-General shall be appointed by the Conference at its initial session upon the recommendation of the Preparatory Commission.

50. The Director-General shall be responsible to the Conference and the Executive Council for the appointment of the staff and for the organization and functioning of the Technical Secretariat. The paramount consideration in the employment of the staff and in the determination of the conditions of service shall be the necessity of securing the highest standards of professional expertise, experience, efficiency, competence and integrity. Only citizens of States Parties shall serve as the Director-General, as inspectors or as members of the professional and clerical staff. Due regard shall be paid to the importance of recruiting the staff on as wide a geographical basis as possible. Recruitment shall be guided by the principle that the staff shall be kept to the minimum necessary for the proper discharge of the responsibilities of the Technical Secretariat.

51. The Director-General may, as appropriate, after consultation with the Executive Council, establish temporary working groups of scientific experts to provide recommendations on specific issues.

52. In the performance of their duties, the Director-General, the inspectors, the inspection assistants and the members of the staff shall not seek or receive instructions from any Government or from any other source external to the Organization. They shall refrain from any action that might reflect adversely on their positions as international officers responsible only to the Organization. The Director-General shall assume responsibility for the activities of an inspection team.

53. Each State Party shall respect the exclusively international character of the responsibilities of the Director-General, the inspectors, the inspection assistants and the members of the staff and shall not seek to influence them in the discharge of their responsibilities.

E. PRIVILEGES AND IMMUNITIES

54. The Organization shall enjoy on the territory and in any other place under the jurisdiction or control of a State Party such legal capacity and such privileges and immunities as are necessary for the exercise of its functions.

55. Delegates of States Parties, together with their alternates and advisers, representatives of members elected to the Executive Council, together with their alternates and advisers, the Director-General, the inspectors, the inspection assistants and the members of the staff of the Organization shall enjoy such privileges and immunities as are necessary in the independent exercise of their functions in connection with the Organization.

56. The legal capacity, privileges and immunities referred to in this Article shall be defined in agreements between the Organization and the States Parties as well as in an agreement between the

Organization and the State in which the Organization is seated. Such agreements shall be considered and approved in accordance with paragraph 26 (h) and (i).

57. Notwithstanding paragraphs 54 and 55, the privileges and immunities enjoyed by the Director-General, the inspectors, the inspection assistants and the members of the staff of the Technical Secretariat during the conduct of verification activities shall be those set forth in the Protocol.

ARTICLE III

NATIONAL IMPLEMENTATION MEASURES

1. Each State Party shall, in accordance with its constitutional processes, take any necessary measures to implement its obligations under this Treaty. In particular, it shall take any necessary measures:

(a) To prohibit natural and legal persons anywhere on its territory or in any other place under its jurisdiction as recognized by international law from undertaking any activity prohibited to a State Party under this Treaty;

(b) To prohibit natural and legal persons from undertaking any such activity anywhere under its control; and

(c) To prohibit, in conformity with international law, natural persons possessing its nationality from undertaking any such activity anywhere.

2. Each State Party shall cooperate with other States Parties and afford the appropriate form of legal assistance to facilitate the implementation of the obligations under paragraph 1.

3. Each State Party shall inform the Organization of the measures taken pursuant to this Article.

4. In order to fulfil its obligations under the Treaty, each State Party shall designate or set up a National Authority and shall so inform the Organization upon entry into force of the Treaty for it. The National Authority shall serve as the national focal point for liaison with the Organization and with other States Parties.

ARTICLE IV

VERIFICATION

A. GENERAL PROVISIONS

1. In order to verify compliance with this Treaty, a verification regime shall be established consisting of the following elements:

(a) An International Monitoring System;

(b) Consultation and clarification;

(c) On-site inspections; and

(d) Confidence-building measures.

At entry into force of this Treaty, the verification regime shall be capable of meeting the verification requirements of this Treaty.

2. Verification activities shall be based on objective information, shall be limited to the subject matter of this Treaty, and shall be carried out on the basis of full respect for the sovereignty of States Parties and in the least intrusive manner possible consistent with the effective and timely accomplishment of their objectives. Each State Party shall refrain from any abuse of the right of verification.

3. Each State Party undertakes in accordance with this Treaty to cooperate, through its National Authority established pursuant to Article III, paragraph 4, with the Organization and with other States Parties to facilitate the verification of compliance with this Treaty by, inter alia:

(a) Establishing the necessary facilities to participate in these verification measures and establishing the necessary communication;

(b) Providing data obtained from national stations that are part of the International Monitoring System;

(c) Participating, as appropriate, in a consultation and clarification process;

(d) Permitting the conduct of on-site inspections; and

(e) Participating, as appropriate, in confidence-building measures.

4. All States Parties, irrespective of their technical and financial capabilities, shall enjoy the equal right of verification and assume the equal obligation to accept verification.

5. For the purposes of this Treaty, no State Party shall be precluded from using information obtained by national technical means of verification in a manner consistent with generally recognized principles of international law, including that of respect for the sovereignty of States.

6. Without prejudice to the right of States Parties to protect sensitive installations, activities or locations not related to this Treaty, States Parties shall not interfere with elements of the verification regime of this Treaty or with national technical means of verification operating in accordance with paragraph 5.

7. Each State Party shall have the right to take measures to protect sensitive installations and to prevent disclosure of confidential information and data not related to this Treaty.

8. Moreover, all necessary measures shall be taken to protect the confidentiality of any information related to civil and military activities and facilities obtained during verification activities.

9. Subject to paragraph 8, information obtained by the Organization through the verification regime established by this Treaty shall be made available to all States Parties in accordance with the relevant provisions of this Treaty and the Protocol.

10. The provisions of this Treaty shall not be interpreted as restricting the international exchange of data for scientific purposes.

11. Each State Party undertakes to cooperate with the Organization and with other States Parties in the improvement of the verification regime, and in the examination of the verification potential of additional monitoring technologies such as electromagnetic pulse monitoring or satellite monitoring, with a view to developing, when appropriate, specific measures to enhance the efficient and cost-effective verification of this Treaty. Such measures shall, when agreed, be incorporated in existing provisions in this Treaty, the Protocol or as additional sections of the Protocol, in accordance with Article VII, or, if appropriate, be reflected in the operational manuals in accordance with Article II, paragraph 44.

12. The States Parties undertake to promote cooperation among themselves to facilitate and participate in the fullest possible exchange relating to technologies used in the verification of this Treaty in order to enable all States Parties to strengthen their national implementation of verification measures and to benefit from the application of such technologies for peaceful purposes.

13. The provisions of this Treaty shall be implemented in a manner which avoids hampering the economic and technological development of the States Parties for further development of the application of atomic energy for peaceful purposes.

Verification Responsibilities of the Technical Secretariat

14. In discharging its responsibilities in the area of verification specified in this Treaty and the Protocol, in cooperation with the States Parties the Technical Secretariat shall, for the purpose of this Treaty:

(a) Make arrangements to receive and distribute data and reporting products relevant to the verification of this Treaty in accordance with its provisions, and to maintain a global communications infrastructure appropriate to this task;

(b) Routinely through its International Data Centre, which shall in principle be the focal point within the Technical Secretariat for data storage and data processing:

(i) Receive and initiate requests for data from the International Monitoring System;

(ii) Receive data, as appropriate, resulting from the process of consultation and clarification, from on-site inspections, and from confidence-building measures; and

(iii) Receive other relevant data from States Parties and international organizations in accordance with this Treaty and the Protocol;

(c) Supervise, coordinate and ensure the operation of the International Monitoring System and its component elements, and of the International Data Centre, in accordance with the relevant operational manuals;

(d) Routinely process, analyse and report on International Monitoring System data according to agreed procedures so as to permit the effective international verification of this Treaty and to contribute to the early resolution of compliance concerns;

(e) Make available all data, both raw and processed, and any reporting products, to all States Parties, each State Party taking responsibility for the use of International Monitoring System data in accordance with Article II, paragraph 7, and with paragraphs 8 and 13 of this Article;

(f) Provide to all States Parties equal, open, convenient and timely access to all stored data;

(g) Store all data, both raw and processed, and reporting products;

(h) Coordinate and facilitate requests for additional data from the International Monitoring System;

(i) Coordinate requests for additional data from one State Party to another State Party;

(j) Provide technical assistance in, and support for, the installation and operation of monitoring facilities and respective communication means, where such assistance and support are required by the State concerned;

(k) Make available to any State Party, upon its request, techniques utilized by the Technical Secretariat and its International Data Centre in compiling, storing, processing, analysing and reporting on data from the verification regime; and

(l) Monitor, assess and report on the overall performance of the International Monitoring System and of the International Data Centre.

15. The agreed procedures to be used by the Technical Secretariat in discharging the verification responsibilities referred to in paragraph 14 and detailed in the Protocol shall be elaborated in the relevant operational manuals.

B. THE INTERNATIONAL MONITORING SYSTEM

16. The International Monitoring System shall comprise facilities for seismological monitoring, radionuclide monitoring including certified laboratories, hydroacoustic monitoring, infrasound monitoring, and respective means of communication, and shall be supported by the International Data Centre of the Technical Secretariat.

17. The International Monitoring System shall be placed under the authority of the Technical Secretariat. All monitoring facilities of the International Monitoring System shall be owned and operated by the States hosting or otherwise taking responsibility for them in accordance with the Protocol.

18. Each State Party shall have the right to participate in the international exchange of data and to have access to all data made available to the International Data Centre. Each State Party shall cooperate with the International Data Centre through its National Authority.

Funding the International Monitoring System

19. For facilities incorporated into the International Monitoring System and specified in Tables 1-A, 2-A, 3 and 4 of Annex 1 to the Protocol, and for their functioning, to the extent that such facilities

are agreed by the relevant State and the Organization to provide data to the International Data Centre in accordance with the technical requirements of the Protocol and relevant operational manuals, the Organization, as specified in agreements or arrangements pursuant to Part I, paragraph 4 of the Protocol, shall meet the costs of:

- (a) Establishing any new facilities and upgrading existing facilities, unless the State responsible for such facilities meets these costs itself;
- (b) Operating and maintaining International Monitoring System facilities, including facility physical security if appropriate, and application of agreed data authentication procedures;
- (c) Transmitting International Monitoring System data (raw or processed) to the International Data Centre by the most direct and cost-effective means available, including, if necessary, via appropriate communications nodes, from monitoring stations, laboratories, analytical facilities or from national data centres; or such data (including samples where appropriate) to laboratory and analytical facilities from monitoring stations; and
- (d) Analysing samples on behalf of the Organization.

20. For auxiliary network seismic stations specified in Table 1-B of Annex 1 to the Protocol the Organization, as specified in agreements or arrangements pursuant to Part I, paragraph 4 of the Protocol, shall meet the costs only of:

- (a) Transmitting data to the International Data Centre;
- (b) Authenticating data from such stations;
- (c) Upgrading stations to the required technical standard, unless the State responsible for such facilities meets these costs itself;
- (d) If necessary, establishing new stations for the purposes of this Treaty where no appropriate facilities currently exist, unless the State responsible for such facilities meets these costs itself; and
- (e) Any other costs related to the provision of data required by the Organization as specified in the relevant operational manuals.

21. The Organization shall also meet the cost of provision to each State Party of its requested selection from the standard range of International Data Centre reporting products and services, as specified in Part I, Section F of the Protocol. The cost of preparation and transmission of any additional data or products shall be met by the requesting State Party.

22. The agreements or, if appropriate, arrangements concluded with States Parties or States hosting or otherwise taking responsibility for facilities of the International Monitoring System shall contain provisions for meeting these costs. Such provisions may include modalities whereby a State Party meets any of the costs referred to in paragraphs 19 (a) and 20 (c) and (d) for facilities which it hosts or for which it is responsible, and is compensated by an appropriate reduction in its assessed financial contribution to the Organization. Such a reduction shall not exceed 50 per cent of the annual assessed financial contribution of a State Party, but may be spread over successive years. A State Party may share such a reduction with another State Party by agreement or arrangement between themselves and with the concurrence of the Executive Council. The agreements or arrangements

referred to in this paragraph shall be approved in accordance with Article II, paragraphs 26 (h) and 38 (i).

Changes to the International Monitoring System

23. Any measures referred to in paragraph 11 affecting the International Monitoring System by means of addition or deletion of a monitoring technology shall, when agreed, be incorporated into this Treaty and the Protocol pursuant to Article VII, paragraphs 1 to 6.

24. The following changes to the International Monitoring System, subject to the agreement of those States directly affected, shall be regarded as matters of an administrative or technical nature pursuant to Article VII, paragraphs 7 and 8:

(a) Changes to the number of facilities specified in the Protocol for a given monitoring technology; and

(b) Changes to other details for particular facilities as reflected in the Tables of Annex 1 to the Protocol (including, *inter alia*, State responsible for the facility; location; name of facility; type of facility; and attribution of a facility between the primary and auxiliary seismic networks).

If the Executive Council recommends, pursuant to Article VII, paragraph 8 (d), that such changes be adopted, it shall as a rule also recommend pursuant to Article VII, paragraph 8 (g), that such changes enter into force upon notification by the Director-General of their approval.

25. The Director-General, in submitting to the Executive Council and States Parties information and evaluation in accordance with Article VII, paragraph 8 (b), shall include in the case of any proposal made pursuant to paragraph 24:

(a) A technical evaluation of the proposal;

(b) A statement on the administrative and financial impact of the proposal; and

(c) A report on consultations with States directly affected by the proposal, including indication of their agreement.

Temporary Arrangements

26. In cases of significant or irretrievable breakdown of a monitoring facility specified in the Tables of Annex 1 to the Protocol, or in order to cover other temporary reductions of monitoring coverage, the Director-General shall, in consultation and agreement with those States directly affected, and with the approval of the Executive Council, initiate temporary arrangements of no more than one year's duration, renewable if necessary by agreement of the Executive Council and of the States directly affected for another year. Such arrangements shall not cause the number of operational facilities of the International Monitoring System to exceed the number specified for the relevant network; shall meet as far as possible the technical and operational requirements specified in the operational manual for the relevant network; and shall be conducted within the budget of the Organization. The Director-General shall furthermore take steps to rectify the situation and make proposals for its permanent resolution. The Director-General shall notify all States Parties of any decision taken pursuant to this paragraph.

Cooperating National Facilities

27. States Parties may also separately establish cooperative arrangements with the Organization, in order to make available to the International Data Centre supplementary data from national monitoring stations that are not formally part of the International Monitoring System.

28. Such cooperative arrangements may be established as follows:

(a) Upon request by a State Party, and at the expense of that State, the Technical Secretariat shall take the steps required to certify that a given monitoring facility meets the technical and operational requirements specified in the relevant operational manuals for an International Monitoring System facility, and make arrangements for the authentication of its data. Subject to the agreement of the Executive Council, the Technical Secretariat shall then formally designate such a facility as a cooperating national facility. The Technical Secretariat shall take the steps required to revalidate its certification as appropriate;

(b) The Technical Secretariat shall maintain a current list of cooperating national facilities and shall distribute it to all States Parties; and

(c) The International Data Centre shall call upon data from cooperating national facilities, if so requested by a State Party, for the purposes of facilitating consultation and clarification and the consideration of on-site inspection requests, data transmission costs being borne by that State Party.

The conditions under which supplementary data from such facilities are made available, and under which the International Data Centre may request further or expedited reporting, or clarifications, shall be elaborated in the operational manual for the respective monitoring network.

C. CONSULTATION AND CLARIFICATION

29. Without prejudice to the right of any State Party to request an on-site inspection, States Parties should, whenever possible, first make every effort to clarify and resolve, among themselves or with or through the Organization, any matter which may cause concern about possible non-compliance with the basic obligations of this Treaty.

30. A State Party that receives a request pursuant to paragraph 29 directly from another State Party shall provide the clarification to the requesting State Party as soon as possible, but in any case no later than 48 hours after the request. The requesting and requested States Parties may keep the Executive Council and the Director-General informed of the request and the response.

31. A State Party shall have the right to request the Director-General to assist in clarifying any matter which may cause concern about possible non-compliance with the basic obligations of this Treaty. The Director-General shall provide appropriate information in the possession of the Technical Secretariat relevant to such a concern. The Director-General shall inform the Executive Council of the request and of the information provided in response, if so requested by the requesting State Party.

32. A State Party shall have the right to request the Executive Council to obtain clarification from another State Party on any matter which may cause concern about possible non-compliance with the basic obligations of this Treaty. In such a case, the following shall apply:

(a) The Executive Council shall forward the request for clarification to the requested State Party through the Director-General no later than 24 hours after its receipt;

(b) The requested State Party shall provide the clarification to the Executive Council as soon as possible, but in any case no later than 48 hours after receipt of the request;

(c) The Executive Council shall take note of the clarification and forward it to the requesting State Party no later than 24 hours after its receipt;

(d) If the requesting State Party deems the clarification to be inadequate, it shall have the right to request the Executive Council to obtain further clarification from the requested State Party.

The Executive Council shall inform without delay all other States Parties about any request for clarification pursuant to this paragraph as well as any response provided by the requested State Party.

33. If the requesting State Party considers the clarification obtained under paragraph 32 (d) to be unsatisfactory, it shall have the right to request a meeting of the Executive Council in which States Parties involved that are not members of the Executive Council shall be entitled to take part. At such a meeting, the Executive Council shall consider the matter and may recommend any measure in accordance with Article V.

D. ON-SITE INSPECTIONS

Request for an On-Site Inspection

34. Each State Party has the right to request an on-site inspection in accordance with the provisions of this Article and Part II of the Protocol in the territory or in any other place under the jurisdiction or control of any State Party, or in any area beyond the jurisdiction or control of any State.

35. The sole purpose of an on-site inspection shall be to clarify whether a nuclear weapon test explosion or any other nuclear explosion has been carried out in violation of Article I and, to the extent possible, to gather any facts which might assist in identifying any possible violator.

36. The requesting State Party shall be under the obligation to keep the on-site inspection request within the scope of this Treaty and to provide in the request information in accordance with paragraph 37.

37. The requesting State Party shall refrain from unfounded or abusive inspection requests.

37. The on-site inspection request shall be based on information collected by the International Monitoring System, on any relevant technical information obtained by national technical means of verification in a manner consistent with generally recognized principles of international law, or on a combination thereof. The request shall contain information pursuant to Part II, paragraph 41 of the Protocol.

38. The requesting State Party shall present the on-site inspection request to the Executive Council and at the same time to the Director-General for the latter to begin immediate processing.

Follow-up After Submission of an On-Site Inspection Request

39. The Executive Council shall begin its consideration immediately upon receipt of the on-site inspection request.

40. The Director-General, after receiving the on-site inspection request, shall acknowledge receipt of the request to the requesting State Party within two hours and communicate the request to the State Party sought to be inspected within six hours. The Director-General shall ascertain that the request meets the requirements specified in Part II, paragraph 41 of the Protocol, and, if necessary, shall assist the requesting State Party in filing the request accordingly, and shall communicate the request to the Executive Council and to all other States Parties within 24 hours.

41. When the on-site inspection request fulfils the requirements, the Technical Secretariat shall begin preparations for the on-site inspection without delay.

42. The Director-General, upon receipt of an on-site inspection request referring to an inspection area under the jurisdiction or control of a State Party, shall immediately seek clarification from the State Party sought to be inspected in order to clarify and resolve the concern raised in the request.

43. A State Party that receives a request for clarification pursuant to paragraph 42 shall provide the Director-General with explanations and with other relevant information available as soon as possible, but no later than 72 hours after receipt of the request for clarification.

44. The Director-General, before the Executive Council takes a decision on the on-site inspection request, shall transmit immediately to the Executive Council any additional information available from the International Monitoring System or provided by any State Party on the event specified in the request, including any clarification provided pursuant to paragraphs 42 and 43, as well as any other information from within the Technical Secretariat that the Director-General deems relevant or that is requested by the Executive Council.

45. Unless the requesting State Party considers the concern raised in the on-site inspection request to be resolved and withdraws the request, the Executive Council shall take a decision on the request in accordance with paragraph 46.

Executive Council Decisions

46. The Executive Council shall take a decision on the on-site inspection request no later than 96 hours after receipt of the request from the requesting State Party. The decision to approve the on-site inspection shall be made by at least 30 affirmative votes of members of the Executive Council. If the Executive Council does not approve the inspection, preparations shall be stopped and no further action on the request shall be taken.

47. No later than 25 days after the approval of the on-site inspection in accordance with paragraph 46, the inspection team shall transmit to the Executive Council, through the Director-General, a progress inspection report. The continuation of the inspection shall be considered approved unless the Executive Council, no later than 72 hours after receipt of the progress inspection report, decides by a majority of all its members not to continue the inspection. If the Executive Council decides not to continue the inspection, the inspection shall be terminated, and the inspection team shall leave the inspection area and the territory of the inspected State Party as soon as possible in accordance with Part II, paragraphs 109 and 110 of the Protocol.

48. In the course of the on-site inspection, the inspection team may submit to the Executive Council, through the Director-General, a proposal to conduct drilling. The Executive Council shall take a decision on such a proposal no later than 72 hours after receipt of the proposal. The decision to approve drilling shall be made by a majority of all members of the Executive Council.

49. The inspection team may request the Executive Council, through the Director-General, to extend the inspection duration by a maximum of 70 days beyond the 60-day time-frame specified in Part II, paragraph 4 of the Protocol, if the inspection team considers such an extension essential to enable it to fulfil its mandate. The inspection team shall indicate in its request which of the activities and techniques listed in Part II, paragraph 69 of the Protocol it intends to carry out during the extension period. The Executive Council shall take a decision on the extension request no later than 72 hours after receipt of the request. The decision to approve an extension of the inspection duration shall be made by a majority of all members of the Executive Council.

50. Any time following the approval of the continuation of the on-site inspection in accordance with paragraph 47, the inspection team may submit to the Executive Council, through the Director-General, a recommendation to terminate the inspection. Such a recommendation shall be considered approved unless the Executive Council, no later than 72 hours after receipt of the recommendation, decides by a two-thirds majority of all its members not to approve the termination of the inspection. In case of termination of the inspection, the inspection team shall leave the inspection area and the territory of the inspected State Party as soon as possible in accordance with Part II, paragraphs 109 and 110 of the Protocol.

51. The requesting State Party and the State Party sought to be inspected may participate in the deliberations of the Executive Council on the on-site inspection request without voting. The requesting State Party and the inspected State Party may also participate without voting in any subsequent deliberations of the Executive Council related to the inspection.

52. The Director-General shall notify all States Parties within 24 hours about any decision by and reports, proposals, requests and recommendations to the Executive Council pursuant to paragraphs 46 to 50.

Follow-up After Executive Council Approval of an On-Site Inspection

53. An on-site inspection approved by the Executive Council shall be conducted without delay by an inspection team designated by the Director-General and in accordance with the provisions of this Treaty and the Protocol. The inspection team shall arrive at the point of entry no later than six days following the receipt by the Executive Council of the on-site inspection request from the requesting State Party.

54. The Director-General shall issue an inspection mandate for the conduct of the on-site inspection. The inspection mandate shall contain the information specified in Part II, paragraph 42 of the Protocol.

55. The Director-General shall notify the inspected State Party of the inspection no less than 24 hours before the planned arrival of the inspection team at the point of entry, in accordance with Part II, paragraph 43 of the Protocol.

The Conduct of an On-Site Inspection

56. Each State Party shall permit the Organization to conduct an on-site inspection on its territory or at places under its jurisdiction or control in accordance with the provisions of this Treaty and the Protocol. However, no State Party shall have to accept simultaneous on-site inspections on its territory or at places under its jurisdiction or control.

57. In accordance with the provisions of this Treaty and the Protocol, the inspected State Party shall have:

(a) The right and the obligation to make every reasonable effort to demonstrate its compliance with this Treaty and, to this end, to enable the inspection team to fulfil its mandate;

(b) The right to take measures it deems necessary to protect national security interests and to prevent disclosure of confidential information not related to the purpose of the inspection;

(c) The obligation to provide access within the inspection area for the sole purpose of determining facts relevant to the purpose of the inspection, taking into account sub-paragraph (b) and any constitutional obligations it may have with regard to proprietary rights or searches and seizures;

(d) The obligation not to invoke this paragraph or Part II, paragraph 88 of the Protocol to conceal any violation of its obligations under Article I; and

(e) The obligation not to impede the ability of the inspection team to move within the inspection area and to carry out inspection activities in accordance with this Treaty and the Protocol.

Access, in the context of an on-site inspection, means both the physical access of the inspection team and the inspection equipment to, and the conduct of inspection activities within, the inspection area.

58. The on-site inspection shall be conducted in the least intrusive manner possible, consistent with the efficient and timely accomplishment of the inspection mandate, and in accordance with the procedures set forth in the Protocol. Wherever possible, the inspection team shall begin with the least intrusive procedures and then proceed to more intrusive procedures only as it deems necessary to collect sufficient information to clarify the concern about possible non-compliance with this Treaty. The inspectors shall seek only the information and data necessary for the purpose of the inspection and shall seek to minimize interference with normal operations of the inspected State Party.

59. The inspected State Party shall assist the inspection team throughout the on-site inspection and facilitate its task.

60. If the inspected State Party, acting in accordance with Part II, paragraphs 86 to 96 of the Protocol, restricts access within the inspection area, it shall make every reasonable effort in consultations with the inspection team to demonstrate through alternative means its compliance with this Treaty.

Observer

61. With regard to an observer, the following shall apply:

(a) The requesting State Party, subject to the agreement of the inspected State Party, may send a representative, who shall be a national either of the requesting State Party or of a third State Party, to observe the conduct of the on-site inspection;

(b) The inspected State Party shall notify its acceptance or non-acceptance of the proposed observer to the Director-General within 12 hours after approval of the on-site inspection by the Executive Council;

(c) In case of acceptance, the inspected State Party shall grant access to the observer in accordance with the Protocol;

(d) The inspected State Party shall, as a rule, accept the proposed observer, but if the inspected State Party exercises a refusal, that fact shall be recorded in the inspection report.

There shall be no more than three observers from an aggregate of requesting States Parties.

Reports of an On-Site Inspection

62. Inspection reports shall contain:

- (a) A description of the activities conducted by the inspection team;
- (b) The factual findings of the inspection team relevant to the purpose of the inspection;
- (c) An account of the cooperation granted during the on-site inspection;
- (d) A factual description of the extent of the access granted, including the alternative means provided to the team, during the on-site inspection; and
- (e) Any other details relevant to the purpose of the inspection.

Differing observations made by inspectors may be attached to the report.

63. The Director-General shall make draft inspection reports available to the inspected State Party. The inspected State Party shall have the right to provide the Director-General within 48 hours with its comments and explanations, and to identify any information and data which, in its view, are not related to the purpose of the inspection and should not be circulated outside the Technical Secretariat. The Director-General shall consider the proposals for changes to the draft inspection report made by the inspected State Party and shall wherever possible incorporate them. The Director-General shall also annex the comments and explanations provided by the inspected State Party to the inspection report.

64. The Director-General shall promptly transmit the inspection report to the requesting State Party, the inspected State Party, the Executive Council and to all other States Parties. The Director-General shall further transmit promptly to the Executive Council and to all other States Parties any results of sample analysis in designated laboratories in accordance with Part II, paragraph 104 of the Protocol, relevant data from the International Monitoring System, the assessments of the requesting and inspected States Parties, as well as any other information that the Director-General deems relevant. In the case of the progress inspection report referred to in paragraph 47, the Director-General shall transmit the report to the Executive Council within the time-frame specified in that paragraph.

65. The Executive Council, in accordance with its powers and functions, shall review the inspection report and any material provided pursuant to paragraph 64, and shall address any concerns as to:

- (a) Whether any non-compliance with this Treaty has occurred; and
- (b) Whether the right to request an on-site inspection has been abused.

66. If the Executive Council reaches the conclusion, in keeping with its powers and functions, that further action may be necessary with regard to paragraph 65, it shall take the appropriate measures in accordance with Article V.

Frivolous or Abusive On-Site Inspection Requests

67. If the Executive Council does not approve the on-site inspection on the basis that the on-site inspection request is frivolous or abusive, or if the inspection is terminated for the same reasons, the Executive Council shall consider and decide on whether to implement appropriate measures to redress the situation, including the following:

(a) Requiring the requesting State Party to pay for the cost of any preparations made by the Technical Secretariat;

(b) Suspending the right of the requesting State Party to request an on-site inspection for a period of time, as determined by the Executive Council; and

(c) Suspending the right of the requesting State Party to serve on the Executive Council for a period of time.

E. CONFIDENCE-BUILDING MEASURES

68. In order to:

(a) Contribute to the timely resolution of any compliance concerns arising from possible misinterpretation of verification data relating to chemical explosions; and

(b) Assist in the calibration of the stations that are part of the component networks of the International Monitoring System,

each State Party undertakes to cooperate with the Organization and with other States Parties in implementing relevant measures as set out in Part III of the Protocol.

ARTICLE V

MEASURES TO REDRESS A SITUATION AND TO ENSURE COMPLIANCE, INCLUDING SANCTIONS

1. The Conference, taking into account, inter alia, the recommendations of the Executive Council, shall take the necessary measures, as set forth in paragraphs 2 and 3, to ensure compliance with this Treaty and to redress and remedy any situation which contravenes the provisions of this Treaty.

2. In cases where a State Party has been requested by the Conference or the Executive Council to redress a situation raising problems with regard to its compliance and fails to fulfil the request within the specified time, the Conference may, inter alia, decide to restrict or suspend the State Party from the exercise of its rights and privileges under this Treaty until the Conference decides otherwise.

3. In cases where damage to the object and purpose of this Treaty may result from non-compliance with the basic obligations of this Treaty, the Conference may recommend to States Parties collective measures which are in conformity with international law.
4. The Conference, or alternatively, if the case is urgent, the Executive Council, may bring the issue, including relevant information and conclusions, to the attention of the United Nations.

ARTICLE VI

SETTLEMENT OF DISPUTES

1. Disputes that may arise concerning the application or the interpretation of this Treaty shall be settled in accordance with the relevant provisions of this Treaty and in conformity with the provisions of the Charter of the United Nations.
2. When a dispute arises between two or more States Parties, or between one or more States Parties and the Organization, relating to the application or interpretation of this Treaty, the parties concerned shall consult together with a view to the expeditious settlement of the dispute by negotiation or by other peaceful means of the parties' choice, including recourse to appropriate organs of this Treaty and, by mutual consent, referral to the International Court of Justice in conformity with the Statute of the Court. The parties involved shall keep the Executive Council informed of actions being taken.
3. The Executive Council may contribute to the settlement of a dispute that may arise concerning the application or interpretation of this Treaty by whatever means it deems appropriate, including offering its good offices, calling upon the States Parties to a dispute to seek a settlement through a process of their own choice, bringing the matter to the attention of the Conference and recommending a time-limit for any agreed procedure.
4. The Conference shall consider questions related to disputes raised by States Parties or brought to its attention by the Executive Council. The Conference shall, as it finds necessary, establish or entrust organs with tasks related to the settlement of these disputes in conformity with Article II, paragraph 26 (j).
5. The Conference and the Executive Council are separately empowered, subject to authorization from the General Assembly of the United Nations, to request the International Court of Justice to give an advisory opinion on any legal question arising within the scope of the activities of the Organization. An agreement between the Organization and the United Nations shall be concluded for this purpose in accordance with Article II, paragraph 38 (h).
6. This Article is without prejudice to Articles IV and V.

ARTICLE VII

AMENDMENTS

1. At any time after the entry into force of this Treaty, any State Party may propose amendments to this Treaty, the Protocol, or the Annexes to the Protocol. Any State Party may also propose changes, in accordance with paragraph 7, to the Protocol or the Annexes thereto. Proposals for

amendments shall be subject to the procedures in paragraphs 2 to 6. Proposals for changes, in accordance with paragraph 7, shall be subject to the procedures in paragraph 8.

2. The proposed amendment shall be considered and adopted only by an Amendment Conference.

3. Any proposal for an amendment shall be communicated to the Director-General, who shall circulate it to all States Parties and the Depositary and seek the views of the States Parties on whether an Amendment Conference should be convened to consider the proposal. If a majority of the States Parties notify the Director-General no later than 30 days after its circulation that they support further consideration of the proposal, the Director-General shall convene an Amendment Conference to which all States Parties shall be invited.

4. The Amendment Conference shall be held immediately following a regular session of the Conference unless all States Parties that support the convening of an Amendment Conference request that it be held earlier. In no case shall an Amendment Conference be held less than 60 days after the circulation of the proposed amendment.

5. Amendments shall be adopted by the Amendment Conference by a positive vote of a majority of the States Parties with no State Party casting a negative vote.

6. Amendments shall enter into force for all States Parties 30 days after deposit of the instruments of ratification or acceptance by all those States Parties casting a positive vote at the Amendment Conference.

7. In order to ensure the viability and effectiveness of this Treaty, Parts I and III of the Protocol and Annexes 1 and 2 to the Protocol shall be subject to changes in accordance with paragraph 8, if the proposed changes are related only to matters of an administrative or technical nature. All other provisions of the Protocol and the Annexes thereto shall not be subject to changes in accordance with paragraph 8.

8. Proposed changes referred to in paragraph 7 shall be made in accordance with the following procedures:

(a) The text of the proposed changes shall be transmitted together with the necessary information to the Director-General. Additional information for the evaluation of the proposal may be provided by any State Party and the Director-General. The Director-General shall promptly communicate any such proposals and information to all States Parties, the Executive Council and the Depositary;

(b) No later than 60 days after its receipt, the Director-General shall evaluate the proposal to determine all its possible consequences for the provisions of this Treaty and its implementation and shall communicate any such information to all States Parties and the Executive Council;

(c) The Executive Council shall examine the proposal in the light of all information available to it, including whether the proposal fulfils the requirements of paragraph 7. No later than 90 days after its receipt, the Executive Council shall notify its recommendation, with appropriate explanations, to all States Parties for consideration. States Parties shall acknowledge receipt within 10 days;

(d) If the Executive Council recommends to all States Parties that the proposal be adopted, it shall be considered approved if no State Party objects to it within 90 days after receipt of the recommendation. If the Executive Council recommends that the proposal be rejected, it shall be considered rejected if no State Party objects to the rejection within 90 days after receipt of the recommendation;

(e) If a recommendation of the Executive Council does not meet with the acceptance required under sub-paragraph (d), a decision on the proposal, including whether it fulfils the requirements of paragraph 7, shall be taken as a matter of substance by the Conference at its next session;

(f) The Director-General shall notify all States Parties and the Depositary of any decision under this paragraph;

(g) Changes approved under this procedure shall enter into force for all States Parties 180 days after the date of notification by the Director-General of their approval unless another time period is recommended by the Executive Council or decided by the Conference.

ARTICLE VIII

REVIEW OF THE TREATY

1. Unless otherwise decided by a majority of the States Parties, ten years after the entry into force of this Treaty a Conference of the States Parties shall be held to review the operation and effectiveness of this Treaty, with a view to assuring itself that the objectives and purposes in the Preamble and the provisions of the Treaty are being realized. Such review shall take into account any new scientific and technological developments relevant to this Treaty. On the basis of a request by any State Party, the Review Conference shall consider the possibility of permitting the conduct of underground nuclear explosions for peaceful purposes. If the Review Conference decides by consensus that such nuclear explosions may be permitted, it shall commence work without delay, with a view to recommending to States Parties an appropriate amendment to this Treaty that shall preclude any military benefits of such nuclear explosions. Any such proposed amendment shall be communicated to the Director-General by any State Party and shall be dealt with in accordance with the provisions of Article VII.

2. At intervals of ten years thereafter, further Review Conferences may be convened with the same objective, if the Conference so decides as a matter of procedure in the preceding year. Such Conferences may be convened after an interval of less than ten years if so decided by the Conference as a matter of substance.

3. Normally, any Review Conference shall be held immediately following the regular annual session of the Conference provided for in Article II.

ARTICLE IX

DURATION AND WITHDRAWAL

1. This Treaty shall be of unlimited duration.

2. Each State Party shall, in exercising its national sovereignty, have the right to withdraw from this Treaty if it decides that extraordinary events related to the subject matter of this Treaty have jeopardized its supreme interests.

3. Withdrawal shall be effected by giving notice six months in advance to all other States Parties, the Executive Council, the Depositary and the United Nations Security Council. Notice of withdrawal shall include a statement of the extraordinary event or events which a State Party regards as jeopardizing its supreme interests.

ARTICLE X

STATUS OF THE PROTOCOL AND THE ANNEXES

The Annexes to this Treaty, the Protocol, and the Annexes to the Protocol form an integral part of the Treaty. Any reference to this Treaty includes the Annexes to this Treaty, the Protocol and the Annexes to the Protocol.

ARTICLE XI

SIGNATURE

This Treaty shall be open to all States for signature before its entry into force.

ARTICLE XII

RATIFICATION

This Treaty shall be subject to ratification by States Signatories according to their respective constitutional processes.

ARTICLE XIII

ACCESSION

Any State which does not sign this Treaty before its entry into force may accede to it at any time thereafter.

ARTICLE XIV

ENTRY INTO FORCE

1. This Treaty shall enter into force 180 days after the date of deposit of the instruments of ratification by all States listed in Annex 2 to this Treaty, but in no case earlier than two years after its opening for signature.

2. If this Treaty has not entered into force three years after the date of the anniversary of its opening for signature, the Depositary shall convene a Conference of the States that have already deposited their instruments of ratification upon the request of a majority of those States. That Conference shall examine the extent to which the requirement set out in paragraph 1 has been met and shall consider and decide by consensus what measures consistent with international law may be undertaken to accelerate the ratification process in order to facilitate the early entry into force of this Treaty.
3. Unless otherwise decided by the Conference referred to in paragraph 2 or other such conferences, this process shall be repeated at subsequent anniversaries of the opening for signature of this Treaty, until its entry into force.
4. All States Signatories shall be invited to attend the Conference referred to in paragraph 2 and any subsequent conferences as referred to in paragraph 3, as observers.
5. For States whose instruments of ratification or accession are deposited subsequent to the entry into force of this Treaty, it shall enter into force on the 30th day following the date of deposit of their instruments of ratification or accession.

ARTICLE XV

RESERVATIONS

The Articles of and the Annexes to this Treaty shall not be subject to reservations. The provisions of the Protocol to this Treaty and the Annexes to the Protocol shall not be subject to reservations incompatible with the object and purpose of this Treaty.

ARTICLE XVI

DEPOSITARY

1. The Secretary-General of the United Nations shall be the Depositary of this Treaty and shall receive signatures, instruments of ratification and instruments of accession.
2. The Depositary shall promptly inform all States Signatories and acceding States of the date of each signature, the date of deposit of each instrument of ratification or accession, the date of the entry into force of this Treaty and of any amendments and changes thereto, and the receipt of other notices.
3. The Depositary shall send duly certified copies of this Treaty to the Governments of the States Signatories and acceding States.
4. This Treaty shall be registered by the Depositary pursuant to Article 102 of the Charter of the United Nations.

ARTICLE XVII

AUTHENTIC TEXTS

This Treaty, of which the Arabic, Chinese, English, French, Russian and Spanish texts are equally authentic, shall be deposited with the Secretary-General of the United Nations.

ANNEX 1 TO THE TREATY

LIST OF STATES PURSUANT TO ARTICLE II, PARAGRAPH 28

Africa

Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo, Côte d'Ivoire, Djibouti, Egypt, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Libyan Arab Jamahiriya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome & Principe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, Sudan, Swaziland, Togo, Tunisia, Uganda, United Republic of Tanzania, Zaire, Zambia, Zimbabwe.

Eastern Europe

Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Latvia, Lithuania, Poland, Republic of Moldova, Romania, Russian Federation, Slovakia, Slovenia, The former Yugoslav Republic of Macedonia, Ukraine, Yugoslavia.

Latin America and the Caribbean

Antigua and Barbuda, Argentina, Bahamas, Barbados, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Uruguay, Venezuela.

Middle East and South Asia

Afghanistan, Bahrain, Bangladesh, Bhutan, India, Iran (Islamic Republic of), Iraq, Israel, Jordan, Kazakhstan, Kuwait, Kyrgyzstan, Lebanon, Maldives, Nepal, Oman, Pakistan, Qatar, Saudi Arabia, Sri Lanka, Syrian Arab Republic, Tajikistan, Turkmenistan, United Arab Emirates, Uzbekistan, Yemen.

North America and Western Europe

Andorra, Austria, Belgium, Canada, Cyprus, Denmark, Finland, France, Germany, Greece, Holy See, Iceland, Ireland, Italy, Liechtenstein, Luxembourg, Malta, Monaco, Netherlands, Norway, Portugal, San Marino, Spain, Sweden, Switzerland, Turkey, United Kingdom of Great Britain and Northern Ireland, United States of America.

South East Asia, the Pacific and the Far East

Australia, Brunei Darussalam, Cambodia, China, Cook Islands, Democratic People's Republic of Korea, Fiji, Indonesia, Japan, Kiribati, Lao People's Democratic Republic, Malaysia, Marshall Islands, Micronesia (Federated States of), Mongolia, Myanmar, Nauru, New Zealand, Niue, Palau, Papua New Guinea, Philippines, Republic of Korea, Samoa, Singapore, Solomon Islands, Thailand, Tonga, Tuvalu, Vanuatu, Viet Nam

ANNEX 2 TO THE TREATY

LIST OF STATES PURSUANT TO ARTICLE XIV

List of States members of the Conference on Disarmament as at 18 June 1996 which formally participated in the work of the 1996 session of the Conference and which appear in Table 1 of the International Atomic Energy Agency's April 1996 edition of "Nuclear Power Reactors in the World", and of States members of the Conference on Disarmament as at 18 June 1996 which formally participated in the work of the 1996 session of the Conference and which appear in Table 1 of the International Atomic Energy Agency's December 1995 edition of "Nuclear Research Reactors in the World":

Algeria, Argentina, Australia, Austria, Bangladesh, Belgium, Brazil, Bulgaria, Canada, Chile, China, Colombia, Democratic People's Republic of Korea, Egypt, Finland, France, Germany, Hungary, India, Indonesia, Iran (Islamic Republic of), Israel, Italy, Japan, Mexico, Netherlands, Norway, Pakistan, Peru, Poland, Romania, Republic of Korea, Russian Federation, Slovakia, South Africa, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom of Great Britain and Northern Ireland, United States of America, Viet Nam, Zaire.

PROTOCOL TO THE COMPREHENSIVE NUCLEAR TEST-BAN TREATY

PART I

THE INTERNATIONAL MONITORING SYSTEM AND INTERNATIONAL DATA CENTRE FUNCTIONS

A. GENERAL PROVISIONS

1. The International Monitoring System shall comprise monitoring facilities as set out in Article IV, paragraph 16, and respective means of communication.
2. The monitoring facilities incorporated into the International Monitoring System shall consist of those facilities specified in Annex 1 to this Protocol. The International Monitoring System shall fulfil the technical and operational requirements specified in the relevant operational manuals.

3. The Organization, in accordance with Article II, shall, in cooperation and consultation with the States Parties, with other States, and with international organizations as appropriate, establish and coordinate the operation and maintenance, and any future agreed modification or development of the International Monitoring System.

4. In accordance with appropriate agreements or arrangements and procedures, a State Party or other State hosting or otherwise taking responsibility for International Monitoring System facilities and the Technical Secretariat shall agree and cooperate in establishing, operating, upgrading, financing, and maintaining monitoring facilities, related certified laboratories and respective means of communication within areas under its jurisdiction or control or elsewhere in conformity with international law. Such cooperation shall be in accordance with the security and authentication requirements and technical specifications contained in the relevant operational manuals. Such a State shall give the Technical Secretariat authority to access a monitoring facility for checking equipment and communication links, and shall agree to make the necessary changes in the equipment and the operational procedures to meet agreed requirements. The Technical Secretariat shall provide to such States appropriate technical assistance as is deemed by the Executive Council to be required for the proper functioning of the facility as part of the International Monitoring System.

5. Modalities for such cooperation between the Organization and States Parties or States hosting or otherwise taking responsibility for facilities of the International Monitoring System shall be set out in agreements or arrangements as appropriate in each case.

B. SEISMOLOGICAL MONITORING

6. Each State Party undertakes to cooperate in an international exchange of seismological data to assist in the verification of compliance with this Treaty. This cooperation shall include the establishment and operation of a global network of primary and auxiliary seismological monitoring stations. These stations shall provide data in accordance with agreed procedures to the International Data Centre.

7. The network of primary stations shall consist of the 50 stations specified in Table 1-A of Annex 1 to this Protocol. These stations shall fulfil the technical and operational requirements specified in the Operational Manual for Seismological Monitoring and the International Exchange of Seismological Data. Uninterrupted data from the primary stations shall be transmitted, directly or through a national data centre, on-line to the International Data Centre.

8. To supplement the primary network, an auxiliary network of 120 stations shall provide information, directly or through a national data centre, to the International Data Centre upon request. The auxiliary stations to be used are listed in Table 1-B of Annex 1 to this Protocol. The auxiliary stations shall fulfil the technical and operational requirements specified in the Operational Manual for Seismological Monitoring and the International Exchange of Seismological Data. Data from the auxiliary stations may at any time be requested by the International Data Centre and shall be immediately available through on-line computer connections.

C. RADIONUCLIDE MONITORING

9. Each State Party undertakes to cooperate in an international exchange of data on radionuclides in the atmosphere to assist in the verification of compliance with this Treaty. This cooperation shall include the establishment and operation of a global network of radionuclide monitoring stations and certified laboratories. The network shall provide data in accordance with agreed procedures to the International Data Centre.

10. The network of stations to measure radionuclides in the atmosphere shall comprise an overall network of 80 stations, as specified in Table 2-A of Annex 1 to this Protocol. All stations shall be capable of monitoring for the presence of relevant particulate matter in the atmosphere. Forty of these stations shall also be capable of monitoring for the presence of relevant noble gases upon the entry into force of this Treaty. For this purpose the Conference, at its initial session, shall approve a recommendation by the Preparatory Commission as to which 40 stations from Table 2-A of Annex 1 to this Protocol shall be capable of noble gas monitoring. At its first regular annual session, the Conference shall consider and decide on a plan for implementing noble gas monitoring capability throughout the network. The Director-General shall prepare a report to the Conference on the modalities for such implementation. All monitoring stations shall fulfil the technical and operational requirements specified in the Operational Manual for Radionuclide Monitoring and the International Exchange of Radionuclide Data.

11. The network of radionuclide monitoring stations shall be supported by laboratories, which shall be certified by the Technical Secretariat in accordance with the relevant operational manual for the performance, on contract to the Organization and on a fee-for-service basis, of the analysis of samples from radionuclide monitoring stations. Laboratories specified in Table 2-B of Annex 1 to this Protocol, and appropriately equipped, shall, as required, also be drawn upon by the Technical Secretariat to perform additional analysis of samples from radionuclide monitoring stations. With the agreement of the Executive Council, further laboratories may be certified by the Technical Secretariat to perform the routine analysis of samples from manual monitoring stations where necessary. All certified laboratories shall provide the results of such analysis to the International Data Centre, and in so doing shall fulfil the technical and operational requirements specified in the Operational Manual on Radionuclide Monitoring and the International Exchange of Radionuclide Data.

D. HYDROACOUSTIC MONITORING

12. Each State Party undertakes to cooperate in an international exchange of hydroacoustic data to assist in the verification of compliance with this Treaty. This cooperation shall include the establishment and operation of a global network of hydroacoustic monitoring stations. These stations shall provide data in accordance with agreed procedures to the International Data Centre.

13. The network of hydroacoustic stations shall consist of the stations specified in Table 3 of Annex 1 to this Protocol, and shall comprise an overall network of six hydrophone and five T-phase stations. These stations shall fulfil the technical and operational requirements specified in the Operational Manual for Hydroacoustic Monitoring and the International Exchange of Hydroacoustic Data.

E. INFRASOUND MONITORING

14. Each State Party undertakes to cooperate in an international exchange of infrasound data to assist in the verification of compliance with this Treaty. This cooperation shall include the establishment and operation of a global network of infrasound monitoring stations. These stations shall provide data in accordance with agreed procedures to the International Data Centre.

15. The network of infrasound stations shall consist of the stations specified in Table 4 of Annex 1 to this Protocol, and shall comprise an overall network of 60 stations. These stations shall fulfil the technical and operational requirements specified in the Operational Manual for Infrasound Monitoring and the International Exchange of Infrasound Data.

F. INTERNATIONAL DATA CENTRE FUNCTIONS

16. The International Data Centre shall receive, collect, process, analyse, report on and archive data from International Monitoring System facilities, including the results of analysis conducted at certified laboratories.

17. The procedures and standard event screening criteria to be used by the International Data Centre in carrying out its agreed functions, in particular for the production of standard reporting products and for the performance of a standard range of services for States Parties, shall be elaborated in the Operational Manual for the International Data Centre and shall be progressively developed. The procedures and criteria developed initially by the Preparatory Commission shall be approved by the Conference at its initial session.

International Data Centre Standard Products

18. The International Data Centre shall apply on a routine basis automatic processing methods and interactive human analysis to raw International Monitoring System data in order to produce and archive standard International Data Centre products on behalf of all States Parties. These products shall be provided at no cost to States Parties and shall be without prejudice to final judgements with regard to the nature of any event, which shall remain the responsibility of States Parties, and shall include:

(a) Integrated lists of all signals detected by the International Monitoring System, as well as standard event lists and bulletins, including the values and associated uncertainties calculated for each event located by the International Data Centre, based on a set of standard parameters;

(b) Standard screened event bulletins that result from the application to each event by the International Data Centre of standard event screening criteria, making use of the characterization parameters specified in Annex 2 to this Protocol, with the objective of characterizing, highlighting in the standard event bulletin, and thereby screening out, events considered to be consistent with natural phenomena or non-nuclear, man-made phenomena. The standard event bulletin shall indicate numerically for each event the degree to which that event meets or does not meet the event screening criteria. In applying standard event screening, the International Data Centre shall use both global and supplementary screening criteria to take account of regional variations where applicable. The International Data Centre shall progressively enhance its technical capabilities as experience is gained in the operation of the International Monitoring System;

(c) Executive summaries, which summarize the data acquired and archived by the International Data Centre, the products of the International Data Centre, and the performance and operational status of the International Monitoring System and International Data Centre; and

(d) Extracts or subsets of the standard International Data Centre products specified in subparagraphs (a) to (c), selected according to the request of an individual State Party.

19. The International Data Centre shall carry out, at no cost to States Parties, special studies to provide in-depth, technical review by expert analysis of data from the International Monitoring System, if requested by the Organization or by a State Party, to improve the estimated values for the standard signal and event parameters.

International Data Centre Services to States Parties

20. The International Data Centre shall provide States Parties with open, equal, timely and convenient access to all International Monitoring System data, raw or processed, all International Data Centre products, and all other International Monitoring System data in the archive of the International Data Centre or, through the International Data Centre, of International Monitoring System facilities. The methods for supporting data access and the provision of data shall include the following services:

(a) Automatic and regular forwarding to a State Party of the products of the International Data Centre or the selection by the State Party thereof, and, as requested, the selection by the State Party of International Monitoring System data;

(b) The provision of the data or products generated in response to ad hoc requests by States Parties for the retrieval from the International Data Centre and International Monitoring System facility archives of data and products, including interactive electronic access to the International Data Centre database; and

(c) Assisting individual States Parties, at their request and at no cost for reasonable efforts, with expert technical analysis of International Monitoring System data and other relevant data provided by the requesting State Party, in order to help the State Party concerned to identify the source of specific events. The output of any such technical analysis shall be considered a product of the requesting State Party, but shall be available to all States Parties.

The International Data Centre services specified in sub-paragraphs (a) and (b) shall be made available at no cost to each State Party. The volumes and formats of data shall be set out in the Operational Manual for the International Data Centre.

National Event Screening

21. The International Data Centre shall, if requested by a State Party, apply to any of its standard products, on a regular and automatic basis, national event screening criteria established by that State Party, and provide the results of such analysis to that State Party. This service shall be undertaken at no cost to the requesting State Party. The output of such national event screening processes shall be considered a product of the requesting State Party.

Technical Assistance

22. The International Data Centre shall, where required, provide technical assistance to individual States Parties:

(a) In formulating their requirements for selection and screening of data and products;

(b) By installing at the International Data Centre, at no cost to a requesting State Party for reasonable efforts, computer algorithms or software provided by that State Party to compute new signal and event parameters that are not included in the Operational Manual for the International Data Centre, the output being considered products of the requesting State Party; and

(c) By assisting States Parties to develop the capability to receive, process and analyse International Monitoring System data at a national data centre.

23. The International Data Centre shall continuously monitor and report on the operational status of the International Monitoring System facilities, of communications links, and of its own processing systems. It shall provide immediate notification to those responsible should the operational performance of any component fail to meet agreed levels set out in the relevant operational manual.

PART II

ON-SITE INSPECTIONS

A. GENERAL PROVISIONS

1. The procedures in this Part shall be implemented pursuant to the provisions for on-site inspections set out in Article IV.
2. The on-site inspection shall be carried out in the area where the event that triggered the on-site inspection request occurred.
3. The area of an on-site inspection shall be continuous and its size shall not exceed 1,000 square kilometres. There shall be no linear distance greater than 50 kilometres in any direction.
4. The duration of an on-site inspection shall not exceed 60 days from the date of the approval of the on-site inspection request in accordance with Article IV, paragraph 46, but may be extended by a maximum of 70 days in accordance with Article IV, paragraph 49.
5. If the inspection area specified in the inspection mandate extends to the territory or other place under the jurisdiction or control of more than one State Party, the provisions on on-site inspections shall, as appropriate, apply to each of the States Parties to which the inspection area extends.
6. In cases where the inspection area is under the jurisdiction or control of the inspected State Party but is located on the territory of another State Party or where the access from the point of entry to the inspection area requires transit through the territory of a State Party other than the inspected State Party, the inspected State Party shall exercise the rights and fulfil the obligations concerning such inspections in accordance with this Protocol. In such a case, the State Party on whose territory the inspection area is located shall facilitate the inspection and shall provide for the necessary support to enable the inspection team to carry out its tasks in a timely and effective manner. States Parties through whose territory transit is required to reach the inspection area shall facilitate such transit.
7. In cases where the inspection area is under the jurisdiction or control of the inspected State Party but is located on the territory of a State not Party to this Treaty, the inspected State Party shall take all necessary measures to ensure that the inspection can be carried out in accordance with this Protocol. A State Party that has under its jurisdiction or control one or more areas on the territory of a State not Party to this Treaty shall take all necessary measures to ensure acceptance by the State on whose territory the inspection area is located of inspectors and inspection assistants designated to that State Party. If an inspected State Party is unable to ensure access, it shall demonstrate that it took all necessary measures to ensure access.
8. In cases where the inspection area is located on the territory of a State Party but is under the jurisdiction or control of a State not Party to this Treaty, the State Party shall take all necessary

measures required of an inspected State Party and a State Party on whose territory the inspection area is located, without prejudice to the rules and practices of international law, to ensure that the on-site inspection can be carried out in accordance with this Protocol. If the State Party is unable to ensure access to the inspection area, it shall demonstrate that it took all necessary measures to ensure access, without prejudice to the rules and practices of international law.

9. The size of the inspection team shall be kept to the minimum necessary for the proper fulfilment of the inspection mandate. The total number of members of the inspection team present on the territory of the inspected State Party at any given time, except during the conduct of drilling, shall not exceed 40 persons. No national of the requesting State Party or the inspected State Party shall be a member of the inspection team.

10. The Director-General shall determine the size of the inspection team and select its members from the list of inspectors and inspection assistants, taking into account the circumstances of a particular request.

11. The inspected State Party shall provide for or arrange the amenities necessary for the inspection team, such as communication means, interpretation services, transportation, working space, lodging, meals, and medical care.

12. The inspected State Party shall be reimbursed by the Organization, in a reasonably short period of time after conclusion of the inspection, for all expenses, including those mentioned in paragraphs 11 and 49, related to the stay and functional activities of the inspection team on the territory of the inspected State Party.

13. Procedures for the implementation of on-site inspections shall be detailed in the Operational Manual for On-Site Inspections.

B. STANDING ARRANGEMENTS

Designation of Inspectors and Inspection Assistants

14. An inspection team may consist of inspectors and inspection assistants. An on-site inspection shall only be carried out by qualified inspectors specially designated for this function. They may be assisted by specially designated inspection assistants, such as technical and administrative personnel, aircrew and interpreters.

15. Inspectors and inspection assistants shall be nominated for designation by the States Parties or, in the case of staff of the Technical Secretariat, by the Director-General, on the basis of their expertise and experience relevant to the purpose and functions of on-site inspections. The nominees shall be approved in advance by the States Parties in accordance with paragraph 18.

16. Each State Party, no later than 30 days after the entry into force of this Treaty for it, shall notify the Director-General of the names, dates of birth, sex, ranks, qualifications and professional experience of the persons proposed by the State Party for designation as inspectors and inspection assistants.

17. No later than 60 days after the entry into force of this Treaty, the Technical Secretariat shall communicate in writing to all States Parties an initial list of the names, nationalities, dates of birth, sex and ranks of the inspectors and inspection assistants proposed for designation by the Director-General and the States Parties, as well as a description of their qualifications and professional experience.

18. Each State Party shall immediately acknowledge receipt of the initial list of inspectors and inspection assistants proposed for designation. Any inspector or inspection assistant included in this list shall be regarded as accepted unless a State Party, no later than 30 days after acknowledgment of receipt of the list, declares its non-acceptance in writing. The State Party may include the reason for the objection. In the case of non-acceptance, the proposed inspector or inspection assistant shall not undertake or participate in on-site inspection activities on the territory or in any other place under the jurisdiction or control of the State Party that has declared its non-acceptance. The Technical Secretariat shall immediately confirm receipt of the notification of objection.

19. Whenever additions or changes to the list of inspectors and inspection assistants are proposed by the Director-General or a State Party, replacement inspectors and inspection assistants shall be designated in the same manner as set forth with respect to the initial list. Each State Party shall promptly notify the Technical Secretariat if an inspector or inspection assistant nominated by it can no longer fulfil the duties of an inspector or inspection assistant.

20. The Technical Secretariat shall keep the list of inspectors and inspection assistants up to date and notify all States Parties of any additions or changes to the list.

21. A State Party requesting an on-site inspection may propose that an inspector from the list of inspectors and inspection assistants serve as its observer in accordance with Article IV, paragraph 61.

22. Subject to paragraph 23, a State Party shall have the right at any time to object to an inspector or inspection assistant who has already been accepted. It shall notify the Technical Secretariat of its objection in writing and may include the reason for the objection. Such objection shall come into effect 30 days after receipt of the notification by the Technical Secretariat. The Technical Secretariat shall immediately confirm receipt of the notification of the objection and inform the objecting and nominating States Parties of the date on which the inspector or inspection assistant shall cease to be designated for that State Party.

23. A State Party that has been notified of an inspection shall not seek the removal from the inspection team of any of the inspectors or inspection assistants named in the inspection mandate.

24. The number of inspectors and inspection assistants accepted by a State Party must be sufficient to allow for availability of appropriate numbers of inspectors and inspection assistants. If, in the opinion of the Director-General, the non-acceptance by a State Party of proposed inspectors or inspection assistants impedes the designation of a sufficient number of inspectors and inspection assistants or otherwise hampers the effective fulfilment of the purposes of an on-site inspection, the Director-General shall refer the issue to the Executive Council.

25. Each inspector included in the list of inspectors and inspection assistants shall receive relevant training. Such training shall be provided by the Technical Secretariat pursuant to the procedures specified in the Operational Manual for On-Site Inspections. The Technical Secretariat shall co-ordinate, in agreement with the States Parties, a schedule of training for the inspectors.

Privileges and Immunities

26. Following acceptance of the initial list of inspectors and inspection assistants as provided for in paragraph 18 or as subsequently altered in accordance with paragraph 19, each State Party shall be obliged to issue, in accordance with its national procedures and upon application by an inspector or inspection assistant, multiple entry/exit and/or transit visas and other relevant documents to enable

each inspector and inspection assistant to enter and to remain on the territory of that State Party for the sole purpose of carrying out inspection activities. Each State Party shall issue the necessary visa or travel documents for this purpose no later than 48 hours after receipt of the application or immediately upon arrival of the inspection team at the point of entry on the territory of the State Party. Such documents shall be valid for as long as is necessary to enable the inspector or inspection assistant to remain on the territory of the inspected State Party for the sole purpose of carrying out the inspection activities.

27. To exercise their functions effectively, members of the inspection team shall be accorded privileges and immunities as set forth in sub-paragraphs (a) to (i). Privileges and immunities shall be granted to members of the inspection team for the sake of this Treaty and not for the personal benefit of the individuals themselves. Such privileges and immunities shall be accorded to them for the entire period between arrival on and departure from the territory of the inspected State Party, and thereafter with respect to acts previously performed in the exercise of their official functions.

(a) The members of the inspection team shall be accorded the inviolability enjoyed by diplomatic agents pursuant to Article 29 of the Vienna Convention on Diplomatic Relations of 18 April 1961;

(b) The living quarters and office premises occupied by the inspection team carrying out inspection activities pursuant to this Treaty shall be accorded the inviolability and protection accorded to the premises of diplomatic agents pursuant to Article 30, paragraph 1, of the Vienna Convention on Diplomatic Relations;

(c) The papers and correspondence, including records, of the inspection team shall enjoy the inviolability accorded to all papers and correspondence of diplomatic agents pursuant to Article 30, paragraph 2, of the Vienna Convention on Diplomatic Relations. The inspection team shall have the right to use codes for their communications with the Technical Secretariat;

(d) Samples and approved equipment carried by members of the inspection team shall be inviolable subject to provisions contained in this Treaty and exempt from all customs duties. Hazardous samples shall be transported in accordance with relevant regulations;

(e) The members of the inspection team shall be accorded the immunities accorded to diplomatic agents pursuant to Article 31, paragraphs 1, 2 and 3, of the Vienna Convention on Diplomatic Relations;

(f) The members of the inspection team carrying out prescribed activities pursuant to this Treaty shall be accorded the exemption from dues and taxes accorded to diplomatic agents pursuant to Article 34 of the Vienna Convention on Diplomatic Relations;

(g) The members of the inspection team shall be permitted to bring into the territory of the inspected State Party, without payment of any customs duties or related charges, articles for personal use, with the exception of articles the import or export of which is prohibited by law or controlled by quarantine regulations;

(h) The members of the inspection team shall be accorded the same currency and exchange facilities as are accorded to representatives of foreign Governments on temporary official missions; and

(i) The members of the inspection team shall not engage in any professional or commercial activity for personal profit on the territory of the inspected State Party.

28. When transiting the territory of States Parties other than the inspected State Party, the members of the inspection team shall be accorded the privileges and immunities enjoyed by diplomatic agents pursuant to Article 40, paragraph 1, of the Vienna Convention on Diplomatic Relations. Papers and correspondence, including records, and samples and approved equipment carried by them, shall be accorded the privileges and immunities set forth in paragraph 27 (c) and (d).

29. Without prejudice to their privileges and immunities the members of the inspection team shall be obliged to respect the laws and regulations of the inspected State Party and, to the extent that is consistent with the inspection mandate, shall be obliged not to interfere in the internal affairs of that State. If the inspected State Party considers that there has been an abuse of privileges and immunities specified in this Protocol, consultations shall be held between the State Party and the Director-General to determine whether such an abuse has occurred and, if so determined, to prevent a repetition of such an abuse.

30. The immunity from jurisdiction of members of the inspection team may be waived by the Director-General in those cases when the Director-General is of the opinion that immunity would impede the course of justice and that it can be waived without prejudice to the implementation of the provisions of this Treaty. Waiver must always be express.

31. Observers shall be accorded the same privileges and immunities accorded to members of the inspection team pursuant to this section, except for those accorded pursuant to paragraph 27 (d).

Points of Entry

32. Each State Party shall designate its points of entry and shall supply the required information to the Technical Secretariat no later than 30 days after this Treaty enters into force for it. These points of entry shall be such that the inspection team can reach any inspection area from at least one point of entry within 24 hours. Locations of points of entry shall be provided to all States Parties by the Technical Secretariat. Points of entry may also serve as points of exit.

33. Each State Party may change its points of entry by giving notice of such change to the Technical Secretariat. Changes shall become effective 30 days after the Technical Secretariat receives such notification, to allow appropriate notification to all States Parties.

34. If the Technical Secretariat considers that there are insufficient points of entry for the timely conduct of inspections or that changes to the points of entry proposed by a State Party would hamper such timely conduct of inspections, it shall enter into consultations with the State Party concerned to resolve the problem.

Arrangements for Use of Non-Scheduled Aircraft

35. Where timely travel to the point of entry is not feasible using scheduled commercial flights, an inspection team may utilize non-scheduled aircraft. No later than 30 days after this Treaty enters into force for it, each State Party shall inform the Technical Secretariat of the standing diplomatic clearance number for non-scheduled aircraft transporting an inspection team and equipment necessary for inspection. Aircraft routings shall be along established international airways that are agreed upon between the State Party and the Technical Secretariat as the basis for such diplomatic clearance.

Approved Inspection Equipment

36. The Conference, at its initial session, shall consider and approve a list of equipment for use during on-site inspections. Each State Party may submit proposals for the inclusion of equipment in the list. Specifications for the use of the equipment, as detailed in the Operational Manual for On-Site Inspections, shall take account of safety and confidentiality considerations where such equipment is likely to be used.

37. The equipment for use during on-site inspections shall consist of core equipment for the inspection activities and techniques specified in paragraph 69 and auxiliary equipment necessary for the effective and timely conduct of on-site inspections.

38. The Technical Secretariat shall ensure that all types of approved equipment are available for on-site inspections when required. When required for an on-site inspection, the Technical Secretariat shall duly certify that the equipment has been calibrated, maintained and protected. To facilitate the checking of the equipment at the point of entry by the inspected State Party, the Technical Secretariat shall provide documentation and attach seals to authenticate the certification.

39. Any permanently held equipment shall be in the custody of the Technical Secretariat. The Technical Secretariat shall be responsible for the maintenance and calibration of such equipment.

40. As appropriate, the Technical Secretariat shall make arrangements with States Parties to provide equipment mentioned in the list. Such States Parties shall be responsible for the maintenance and calibration of such equipment.

C. ON-SITE INSPECTION REQUEST, INSPECTION MANDATE AND NOTIFICATION OF INSPECTION

On-Site Inspection Request

41. Pursuant to Article IV, paragraph 37, the on-site inspection request shall contain at least the following information:

(a) The estimated geographical and vertical co-ordinates of the location of the event that triggered the request with an indication of the possible margin of error;

(b) The proposed boundaries of the area to be inspected, specified on a map and in accordance with paragraphs 2 and 3;

(c) The State Party or States Parties to be inspected or an indication that the area to be inspected or part thereof is beyond the jurisdiction or control of any State;

(d) The probable environment of the event that triggered the request;

(e) The estimated time of the event that triggered the request, with an indication of the possible margin of error;

(f) All data upon which the request is based;

(g) The personal details of the proposed observer, if any; and

(h) The results of a consultation and clarification process in accordance with Article IV, or an explanation, if relevant, of the reasons why such a consultation and clarification process has not been carried out.

Inspection Mandate

42. The mandate for an on-site inspection shall contain:

- (a) The decision of the Executive Council on the on-site inspection request;
- (b) The name of the State Party or States Parties to be inspected or an indication that the inspection area or part thereof is beyond the jurisdiction or control of any State;
- (c) The location and boundaries of the inspection area specified on a map, taking into account all information on which the request was based and all other available technical information, in consultation with the requesting State Party;
- (d) The planned types of activity of the inspection team in the inspection area;
- (e) The point of entry to be used by the inspection team;
- (f) Any transit or basing points, as appropriate;
- (g) The name of the head of the inspection team;
- (h) The names of members of the inspection team;
- (i) The name of the proposed observer, if any; and
- (j) The list of equipment to be used in the inspection area.

If a decision by the Executive Council pursuant to Article IV, paragraphs 46 to 49, necessitates a modification of the inspection mandate, the Director-General may update the mandate with respect to sub-paragraphs (d), (h) and (j), as appropriate. The Director-General shall immediately notify the inspected State Party of any such modification.

Notification of Inspection

43. The notification made by the Director-General pursuant to Article IV, paragraph 55 shall include the following information:

- (a) The inspection mandate;
 - (b) The date and estimated time of arrival of the inspection team at the point of entry;
 - (c) The means of arrival at the point of entry;
 - (d) If appropriate, the standing diplomatic clearance number for non-scheduled aircraft;
- and

(e) A list of any equipment which the Director-General requests the inspected State Party to make available to the inspection team for use in the inspection area.

44. The inspected State Party shall acknowledge receipt of the notification by the Director-General no later than 12 hours after having received the notification.

D. PRE-INSPECTION ACTIVITIES

Entry Into the Territory of the Inspected State Party, **Activities at the Point of Entry and** **Transfer to the Inspection Area**

45. The inspected State Party that has been notified of the arrival of the inspection team shall ensure the immediate entry of the inspection team into its territory.

46. When a non-scheduled aircraft is used for travel to the point of entry, the Technical Secretariat shall provide the inspected State Party with a flight plan, through the National Authority, for the flight of the aircraft from the last airfield prior to entering the airspace of that State Party to the point of entry, no less than six hours before the scheduled departure time from that airfield. Such a plan shall be filed in accordance with the procedures of the International Civil Aviation Organization applicable to civil aircraft. The Technical Secretariat shall include in the remarks section of the flight plan the standing diplomatic clearance number and the appropriate notation identifying the aircraft as an inspection aircraft. If a military aircraft is used, the Technical Secretariat shall request prior authorization from the inspected State Party to enter its airspace.

47. No less than three hours before the scheduled departure of the inspection team from the last airfield prior to entering the airspace of the inspected State Party, the inspected State Party shall ensure that the flight plan filed in accordance with paragraph 46 is approved, so that the inspection team may arrive at the point of entry by the estimated arrival time.

48. Where necessary, the head of the inspection team and the representative of the inspected State Party shall agree on a basing point and a flight plan from the point of entry to the basing point and, if necessary, to the inspection area.

49. The inspected State Party shall provide for or arrange parking, security protection, servicing and fuel as required by the Technical Secretariat for the aircraft of the inspection team at the point of entry and, where necessary, at the basing point and at the inspection area. Such aircraft shall not be liable for landing fees, departure tax, and similar charges. This paragraph shall also apply to aircraft used for overflight during the on-site inspection.

50. Subject to paragraph 51, there shall be no restriction by the inspected State Party on the inspection team bringing approved equipment that is in conformity with the inspection mandate into the territory of that State Party, or on its use in accordance with the provisions of the Treaty and this Protocol.

51. The inspected State Party shall have the right, without prejudice to the time-frame specified in paragraph 54, to check in the presence of inspection team members at the point of entry that the equipment has been approved and certified in accordance with paragraph 38. The inspected State Party may exclude equipment that is not in conformity with the inspection mandate or that has not been approved and certified in accordance with paragraph 38.

52. Immediately upon arrival at the point of entry and without prejudice to the time-frame specified in paragraph 54, the head of the inspection team shall present to the representative of the inspected State Party the inspection mandate and an initial inspection plan prepared by the inspection team specifying the activities to be carried out by it. The inspection team shall be briefed by representatives of the inspected State Party with the aid of maps and other documentation as appropriate. The briefing shall include relevant natural terrain features, safety and confidentiality issues, and logistical arrangements for the inspection. The inspected State Party may indicate locations within the inspection area that, in its view, are not related to the purpose of the inspection.

53. After the pre-inspection briefing, the inspection team shall, as appropriate, modify the initial inspection plan, taking into account any comments by the inspected State Party. The modified inspection plan shall be made available to the representative of the inspected State Party.

54. The inspected State Party shall do everything in its power to provide assistance and to ensure the safe conduct of the inspection team, the approved equipment specified in paragraphs 50 and 51 and baggage from the point of entry to the inspection area no later than 36 hours after arrival at the point of entry, if no other timing has been agreed upon within the time-frame specified in paragraph 57.

55. To confirm that the area to which the inspection team has been transported corresponds to the inspection area specified in the inspection mandate, the inspection team shall have the right to use approved location-finding equipment. The inspected State Party shall assist the inspection team in this task.

E. CONDUCT OF INSPECTIONS

General Rules

56. The inspection team shall discharge its functions in accordance with the provisions of the Treaty and this Protocol.

57. The inspection team shall begin its inspection activities in the inspection area as soon as possible, but in no case later than 72 hours after arrival at the point of entry.

58. The activities of the inspection team shall be so arranged as to ensure the timely and effective discharge of its functions and the least possible inconvenience to the inspected State Party and disturbance to the inspection area.

59. In cases where the inspected State Party has been requested, pursuant to paragraph 43 (e) or in the course of the inspection, to make available any equipment for use by the inspection team in the inspection area, the inspected State Party shall comply with the request to the extent it can.

60. During the on-site inspection the inspection team shall have, inter alia:

(a) The right to determine how the inspection will proceed, consistent with the inspection mandate and taking into account any steps taken by the inspected State Party consistent with the provisions on managed access;

(b) The right to modify the inspection plan, as necessary, to ensure the effective execution of the inspection;

(c) The obligation to take into account the recommendations and suggested modifications by the inspected State Party to the inspection plan;

(d) The right to request clarifications in connection with ambiguities that may arise during the inspection;

(e) The obligation to use only those techniques specified in paragraph 69 and to refrain from activities that are not relevant to the purpose of the inspection. The team shall collect and document such facts as are related to the purpose of the inspection, but shall neither seek nor document information that is clearly unrelated thereto. Any material collected and subsequently found not to be relevant shall be returned to the inspected State Party;

(f) The obligation to take into account and include in its report data and explanations on the nature of the event that triggered the request, provided by the inspected State Party from the national monitoring networks of the inspected State Party and from other sources;

(g) The obligation to provide the inspected State Party, at its request, with copies of the information and data collected in the inspection area; and

(h) The obligation to respect the confidentiality and the safety and health regulations of the inspected State Party.

61. During the on-site inspection the inspected State Party shall have, inter alia:

(a) The right to make recommendations at any time to the inspection team regarding possible modification of the inspection plan;

(b) The right and the obligation to provide a representative to liaise with the inspection team;

(c) The right to have representatives accompany the inspection team during the performance of its duties and observe all inspection activities carried out by the inspection team. This shall not delay or otherwise hinder the inspection team in the exercise of its functions;

(d) The right to provide additional information and to request the collection and documentation of additional facts it believes are relevant to the inspection;

(e) The right to examine all photographic and measurement products as well as samples and to retain any photographs or parts thereof showing sensitive sites not related to the purpose of the inspection. The inspected State Party shall have the right to receive duplicate copies of all photographic and measurement products. The inspected State Party shall have the right to retain photographic originals and first-generation photographic products and to put photographs or parts thereof under joint seal within its territory. The inspected State Party shall have the right to provide its own camera operator to take still/video photographs as requested by the inspection team. Otherwise, these functions shall be performed by members of the inspection team;

(f) The right to provide the inspection team, from its national monitoring networks and from other sources, with data and explanations on the nature of the event that triggered the request; and

(g) The obligation to provide the inspection team with such clarification as may be necessary to resolve any ambiguities that arise during the inspection.

Communications

62. The members of the inspection team shall have the right at all times during the on-site inspection to communicate with each other and with the Technical Secretariat. For this purpose they may use their own duly approved and certified equipment with the consent of the inspected State Party, to the extent that the inspected State Party does not provide them with access to other telecommunications.

Observer

63. In accordance with Article IV, paragraph 61, the requesting State Party shall liaise with the Technical Secretariat to co-ordinate the arrival of the observer at the same point of entry or basing point as the inspection team within a reasonable period of the arrival of the inspection team.

64. The observer shall have the right throughout the inspection to be in communication with the embassy of the requesting State Party located in the inspected State Party or, in the case of absence of an embassy, with the requesting State Party itself.

65. The observer shall have the right to arrive at the inspection area and to have access to and within the inspection area as granted by the inspected State Party.

66. The observer shall have the right to make recommendations to the inspection team throughout the inspection.

67. Throughout the inspection, the inspection team shall keep the observer informed about the conduct of the inspection and the findings.

68. Throughout the inspection, the inspected State Party shall provide or arrange for the amenities necessary for the observer similar to those enjoyed by the inspection team as described in paragraph 11. All costs in connection with the stay of the observer on the territory of the inspected State Party shall be borne by the requesting State Party.

Inspection Activities and Techniques

69. The following inspection activities may be conducted and techniques used, in accordance with the provisions on managed access, on collection, handling and analysis of samples, and on overflights:

(a) Position finding from the air and at the surface to confirm the boundaries of the inspection area and establish co-ordinates of locations therein, in support of the inspection activities;

(b) Visual observation, video and still photography and multi-spectral imaging, including infrared measurements, at and below the surface, and from the air, to search for anomalies or artifacts;

(c) Measurement of levels of radioactivity above, at and below the surface, using gamma radiation monitoring and energy resolution analysis from the air, and at or under the surface, to search for and identify radiation anomalies;

(d) Environmental sampling and analysis of solids, liquids and gases from above, at and below the surface to detect anomalies;

(e) Passive seismological monitoring for aftershocks to localize the search area and facilitate determination of the nature of an event;

(f) Resonance seismometry and active seismic surveys to search for and locate underground anomalies, including cavities and rubble zones;

(g) Magnetic and gravitational field mapping, ground penetrating radar and electrical conductivity measurements at the surface and from the air, as appropriate, to detect anomalies or artifacts; and

(h) Drilling to obtain radioactive samples.

70. Up to 25 days after the approval of the on-site inspection in accordance with Article IV, paragraph 46, the inspection team shall have the right to conduct any of the activities and use any of the techniques listed in paragraph 69 (a) to (e). Following the approval of the continuation of the inspection in accordance with Article IV, paragraph 47, the inspection team shall have the right to conduct any of the activities and use any of the techniques listed in paragraph 69 (a) to (g). The inspection team shall only conduct drilling after the approval of the Executive Council in accordance with Article IV, paragraph 48. If the inspection team requests an extension of the inspection duration in accordance with Article IV, paragraph 49, it shall indicate in its request which of the activities and techniques listed in paragraph 69 it intends to carry out in order to be able to fulfil its mandate.

Overflights

71. The inspection team shall have the right to conduct an overflight over the inspection area during the on-site inspection for the purposes of providing the inspection team with a general orientation of the inspection area, narrowing down and optimizing the locations for ground-based inspection and facilitating the collection of factual evidence, using equipment specified in paragraph 79.

72. The overflight shall be conducted as soon as practically possible. The total duration of the overflight over the inspection area shall be no more than 12 hours.

73. Additional overflights using equipment specified in paragraphs 79 and 80 may be conducted subject to the agreement of the inspected State Party.

74. The area to be covered by overflights shall not extend beyond the inspection area.

75. The inspected State Party shall have the right to impose restrictions or, in exceptional cases and with reasonable justification, prohibitions on the overflight of sensitive sites not related to the purpose of the inspection. Restrictions may relate to the flight altitude, the number of passes and circling, the duration of hovering, the type of aircraft, the number of inspectors on board, and the type of measurements or observations. If the inspection team considers that the restrictions or prohibitions on the overflight of sensitive sites may impede the fulfilment of its mandate, the inspected State Party shall make every reasonable effort to provide alternative means of inspection.

76. Overflights shall be conducted according to a flight plan duly filed and approved in accordance with aviation rules and regulations of the inspected State Party. Flight safety regulations of the inspected State Party shall be strictly observed throughout all flying operations.

77. During overflights landing should normally be authorized only for purposes of staging or refuelling.

78. Overflights shall be conducted at altitudes as requested by the inspection team consistent with the activities to be conducted, visibility conditions, as well as the aviation and the safety regulations of the inspected State Party and its right to protect sensitive information not related to the purposes of the inspection. Overflights shall be conducted up to a maximum altitude of 1,500 metres above the surface.

79. For the overflight conducted pursuant to paragraphs 71 and 72, the following equipment may be used on board the aircraft:

- (a) Field glasses;**
- (b) Passive location-finding equipment;**
- (c) Video cameras; and**
- (d) Hand-held still cameras.**

80. For any additional overflights conducted pursuant to paragraph 73, inspectors on board the aircraft may also use portable, easily installed equipment for:

- (a) Multi-spectral (including infrared) imagery;**
- (b) Gamma spectroscopy; and**
- (c) Magnetic field mapping.**

81. Overflights shall be conducted with a relatively slow fixed or rotary wing aircraft. The aircraft shall afford a broad, unobstructed view of the surface below.

82. The inspected State Party shall have the right to provide its own aircraft, pre-equipped as appropriate in accordance with the technical requirements of the relevant operational manual, and crew. Otherwise, the aircraft shall be provided or rented by the Technical Secretariat.

83. If the aircraft is provided or rented by the Technical Secretariat, the inspected State Party shall have the right to check the aircraft to ensure that it is equipped with approved inspection equipment. Such checking shall be completed within the time-frame specified in paragraph 57.

84. Personnel on board the aircraft shall consist of:

- (a) The minimum number of flight crew consistent with the safe operation of the aircraft;**
- (b) Up to four members of the inspection team;**
- (c) Up to two representatives of the inspected State Party;**
- (d) An observer, if any, subject to the agreement of the inspected State Party; and**
- (e) An interpreter, if necessary.**

85. Procedures for the implementation of overflights shall be detailed in the Operational Manual for On-Site Inspections.

Managed Access

86. The inspection team shall have the right to access the inspection area in accordance with the provisions of the Treaty and this Protocol.

87. The inspected State Party shall provide access within the inspection area in accordance with the time-frame specified in paragraph 57.

88. Pursuant to Article IV, paragraph 57 and paragraph 86 above, the rights and obligations of the inspected State Party shall include:

(a) The right to take measures to protect sensitive installations and locations in accordance with this Protocol;

(b) The obligation, when access is restricted within the inspection area, to make every reasonable effort to satisfy the requirements of the inspection mandate through alternative means. Resolving any questions regarding one or more aspects of the inspection shall not delay or interfere with the conduct of the inspection team of other aspects of the inspection; and

(c) The right to make the final decision regarding any access of the inspection team, taking into account its obligations under this Treaty and the provisions on managed access.

89. Pursuant to Article IV, paragraph 57 (b) and paragraph 88 (a) above, the inspected State Party shall have the right throughout the inspection area to take measures to protect sensitive installations and locations and to prevent disclosure of confidential information not related to the purpose of the inspection. Such measures may include, inter alia:

(a) Shrouding of sensitive displays, stores, and equipment;

(b) Restricting measurements of radionuclide activity and nuclear radiation to determining the presence or absence of those types and energies of radiation relevant to the purpose of the inspection;

(c) Restricting the taking of or analysing of samples to determining the presence or absence of radioactive or other products relevant to the purpose of the inspection;

(d) Managing access to buildings and other structures in accordance with paragraphs 90 and 91; and

(e) Declaring restricted-access sites in accordance with paragraphs 92 to 96.

90. Access to buildings and other structures shall be deferred until after the approval of the continuation of the on-site inspection in accordance with Article IV, paragraph 47, except for access to buildings and other structures housing the entrance to a mine, other excavations, or caverns of large volume not otherwise accessible. For such buildings and structures, the inspection team shall have the right only of transit, as directed by the inspected State Party, in order to enter such mines, caverns or other excavations.

91. If, following the approval of the continuation of the inspection in accordance with Article IV, paragraph 47, the inspection team demonstrates credibly to the inspected State Party that access to buildings and other structures is necessary to fulfil the inspection mandate and that the necessary activities authorized in the mandate could not be carried out from the outside, the inspection team shall have the right to gain access to such buildings or other structures. The head of the inspection team shall request access to a specific building or structure indicating the purpose of such access, the specific number of inspectors, as well as the intended activities. The modalities for access shall be subject to negotiation between the inspection team and the inspected State Party. The inspected State Party shall have the right to impose restrictions or, in exceptional cases and with reasonable justification, prohibitions, on the access to buildings and other structures.

92. When restricted-access sites are declared pursuant to paragraph 89 (e), each such site shall be no larger than 4 square kilometres. The inspected State Party has the right to declare up to 50 square kilometres of restricted-access sites. If more than one restricted-access site is declared, each such site shall be separated from any other such site by a minimum distance of 20 metres. Each restricted-access site shall have clearly defined and accessible boundaries.

93. The size, location, and boundaries of restricted-access sites shall be presented to the head of the inspection team no later than the time that the inspection team seeks access to a location that contains all or part of such a site.

94. The inspection team shall have the right to place equipment and take other steps necessary to conduct its inspection up to the boundary of a restricted-access site.

95. The inspection team shall be permitted to observe visually all open places within the restricted-access site from the boundary of the site.

96. The inspection team shall make every reasonable effort to fulfil the inspection mandate outside the declared restricted-access sites prior to requesting access to such sites. If at any time the inspection team demonstrates credibly to the inspected State Party that the necessary activities authorized in the mandate could not be carried out from the outside and that access to a restricted-access site is necessary to fulfil the mandate, some members of the inspection team shall be granted access to accomplish specific tasks within the site. The inspected State Party shall have the right to shroud or otherwise protect sensitive equipment, objects and materials not related to the purpose of the inspection. The number of inspectors shall be kept to the minimum necessary to complete the tasks related to the inspection. The modalities for such access shall be subject to negotiation between the inspection team and the inspected State Party.

Collection, Handling and Analysis of Samples

97. Subject to paragraphs 86 to 96 and 98 to 100, the inspection team shall have the right to collect and remove relevant samples from the inspection area.

98. Whenever possible, the inspection team shall analyse samples on-site. Representatives of the inspected State Party shall have the right to be present when samples are analysed on-site. At the request of the inspection team, the inspected State Party shall, in accordance with agreed procedures, provide assistance for the analysis of samples on-site. The inspection team shall have the right to transfer samples for off-site analysis at laboratories designated by the Organization only if it demonstrates that the necessary sample analysis cannot be performed on-site.

99. The inspected State Party shall have the right to retain portions of all samples collected when these samples are analysed and may take duplicate samples.

100. The inspected State Party shall have the right to request that any unused samples or portions thereof be returned.

101. The designated laboratories shall conduct chemical and physical analysis of the samples transferred for off-site analysis. Details of such analysis shall be elaborated in the Operational Manual for On-Site Inspections.

102. The Director-General shall have the primary responsibility for the security, integrity and preservation of samples and for ensuring that the confidentiality of samples transferred for off-site analysis is protected. The Director-General shall do so in accordance with procedures contained in the Operational Manual for On-Site Inspections. The Director-General shall, in any case:

(a) Establish a stringent regime governing the collection, handling, transport and analysis of samples;

(b) Certify the laboratories designated to perform different types of analysis;

(c) Oversee the standardization of equipment and procedures at these designated laboratories and of mobile analytical equipment and procedures;

(d) Monitor quality control and overall standards in relation to the certification of these laboratories and in relation to mobile equipment and procedures; and

(e) Select from among the designated laboratories those which shall perform analytical or other functions in relation to specific investigations.

103. When off-site analysis is to be performed, samples shall be analysed in at least two designated laboratories. The Technical Secretariat shall ensure the expeditious processing of the analysis. The samples shall be accounted for by the Technical Secretariat and any unused samples or portions thereof shall be returned to the Technical Secretariat.

104. The Technical Secretariat shall compile the results of the laboratory analysis of samples relevant to the purpose of the inspection. Pursuant to Article IV, paragraph 63, the Director-General shall transmit any such results promptly to the inspected State Party for comments and thereafter to the Executive Council and to all other States Parties and shall include detailed information concerning the equipment and methodology employed by the designated laboratories.

Conduct of Inspections in Areas beyond the Jurisdiction or Control of any State

105. In case of an on-site inspection in an area beyond the jurisdiction or control of any State, the Director-General shall consult with the appropriate States Parties and agree on any transit or basing points to facilitate a speedy arrival of the inspection team in the inspection area.

106. The States Parties on whose territory transit or basing points are located shall, as far as possible, assist in facilitating the inspection, including transporting the inspection team, its baggage and equipment to the inspection area, as well as providing the relevant amenities specified in paragraph 11. The Organization shall reimburse assisting States Parties for all costs incurred.

107. Subject to the approval of the Executive Council, the Director-General may negotiate standing arrangements with States Parties to facilitate assistance in the event of an on-site inspection in an area beyond the jurisdiction or control of any State.

108. In cases where one or more States Parties have conducted an investigation of an ambiguous event in an area beyond the jurisdiction or control of any State before a request is made for an on-site inspection in that area, any results of such investigation may be taken into account by the Executive Council in its deliberations pursuant to Article IV.

Post-Inspection Procedures

109. Upon conclusion of the inspection, the inspection team shall meet with the representative of the inspected State Party to review the preliminary findings of the inspection team and to clarify any ambiguities. The inspection team shall provide the representative of the inspected State Party with its preliminary findings in written form according to a standardized format, together with a list of any samples and other material taken from the inspection area pursuant to paragraph 98. The document shall be signed by the head of the inspection team. In order to indicate that he or she has taken notice of the contents of the document, the representative of the inspected State Party shall countersign the document. The meeting shall be completed no later than 24 hours after the conclusion of the inspection.

Departure

110. Upon completion of the post-inspection procedures, the inspection team and the observer shall leave, as soon as possible, the territory of the inspected State Party. The inspected State Party shall do everything in its power to provide assistance and to ensure the safe conduct of the inspection team, equipment and baggage to the point of exit. Unless agreed otherwise by the inspected State Party and the inspection team, the point of exit used shall be the same as the point of entry.

PART III

CONFIDENCE-BUILDING MEASURES

1. Pursuant to Article IV, paragraph 68, each State Party shall, on a voluntary basis, provide the Technical Secretariat with notification of any chemical explosion using 300 tonnes or greater of TNT-equivalent blasting material detonated as a single explosion anywhere on its territory, or at any place under its jurisdiction or control. If possible, such notification shall be provided in advance. Such notification shall include details on location, time, quantity and type of explosive used, as well as on the configuration and intended purpose of the blast.

2. Each State Party shall, on a voluntary basis, as soon as possible after the entry into force of this Treaty provide to the Technical Secretariat, and at annual intervals thereafter update, information related to its national use of all other chemical explosions greater than 300 tonnes TNT-equivalent. In particular, the State Party shall seek to advise:

- (a) The geographic locations of sites where the explosions originate;

(b) The nature of activities producing them and the general profile and frequency of such explosions;

(c) Any other relevant detail, if available; and

to assist the Technical Secretariat in clarifying the origins of any such event detected by the International Monitoring System.

3. A State Party may, on a voluntary and mutually acceptable basis, invite representatives of the Technical Secretariat or of other States Parties to visit sites within its territory referred to in paragraphs 1 and 2.

4. For the purpose of calibrating the International Monitoring System, States Parties may liaise with the Technical Secretariat to carry out chemical calibration explosions or to provide relevant information on chemical explosions planned for other purposes.

ANNEX 1 TO THE PROTOCOL

Table 1-A **List of Seismological Stations Comprising the Primary Network**

	State Responsible for Station	Location	Latitude	Longitude	Type
1	Argentina	PLCA Paso Flores	40.7 S	70.6 W	3-C
2	Australia	WRA Warramunga, NT	19.9 S	134.3 E	array
3	Australia	ASAR Alice Springs, NT	23.7 S	133.9 E	array
4	Australia	STKA Stephens Creek, SA	31.9 S	141.6 E	3-C
5	Australia	MAW Mawson, Antarctica	67.6 S	62.9 E	3-C
6	Bolivia	LPAZ La Paz	16.3 S	68.1 W	3-C
7	Brazil	BDFB Brasilia	15.6 S	48.0 W	3-C
8	Canada	ULMC Lac du Bonnet, Man.	50.2 N	95.9 W	3-C
9	Canada	YKAC Yellowknife, N.W.T.	62.5 N	114.6 W	array
10	Canada	SCH Schefferville, Quebec	54.8 N	66.8 W	3-C
11	Central African Republic	BGCA Bangui	05.2 N	18.4 E	3-C
12	China	HAI Hailar	49.3 N	119.7 E	3-C > array
13	China	LZHH Lanzhou	36.1 N	103.8 E	3-C > array

	State Responsible for Station	Location	Latitude	Longitude	Type
14	Colombia	XSA El Rosal	04.9 N	74.3 W	3-C
15	Côte d'Ivoire	DBIC Dimbroko	06.7 N	04.9 W	3-C
16	Egypt	LXEG Luxor	26.0 N	33.0 E	array
17	Finland	FINES Lahti	61.4 N	26.1 E	array
18	France	PPT Tahiti	17.6 S	149.6 W	3-C
19	Germany	GEC2 Freyung	48.9 N	13.7 E	array
20	To be determined	To be determined	To be determined	To be determined	To be determined
21	Iran (Islamic Republic of)	THIR Tehran	35.8 N	51.4 E	3-C
22	Japan	MJAR Matsushiro	36.5 N	138.2 E	array
23	Kazakstan	MAK Makanchi	46.8 N	82.0 E	array
24	Kenya	KMBO Kilimambogo	01.1 S	37.2 E	3-C
25	Mongolia	JAVM Javhlant	48.0 N	106.8 E	3-C > array
26	Niger	New Site	to be determined	to be determined	3-C > array
27	Norway	NAO Hamar	60.8 N	10.8 E	array
28	Norway	ARAO Karasjok	69.5 N	25.5 E	array
29	Pakistan	PRPK Pari	33.7 N	73.3 E	array
30	Paraguay	CPUP Villa Florida	26.3 S	57.3 W	3-C
31	Republic of Korea	KSRS Wonju	37.5 N	127.9 E	array
32	Russian Federation	KBZ Khabaz	43.7 N	42.9 E	3-C
33	Russian Federation	ZAL Zalcsovo	53.9 N	84.8 E	3-C > array
34	Russian Federation	NRI Norilsk	69.0 N	88.0 E	3-C
35	Russian Federation	PDY Peleduy	59.6 N	112.6 E	3-C > array
36	Russian Federation	PET Petropavlovsk-Kamchatskiy	53.1 N	157.8 E	3-C > array
37	Russian Federation	USK Ussuriysk	44.2 N	132.0 E	3-C > array
38	Saudi Arabia	New Site	to be determined	to be determined	array

	State Responsible for Station	Location	Latitude	Longitude	Type
39	South Africa	BOSA Boshof	28.6 S	25.6 E	3-C
40	Spain	ESDC Sonseca	39.7 N	04.0 W	array
41	Thailand	CMTO Chiang Mai	18.8 N	99.0 E	array
42	Tunisia	THA Thala	35.6 N	08.7 E	3-C
43	Turkey	BRTR Belbashi The array is subject to relocation at Keskin	39.9 N	32.8 E	array
44	Turkmenistan	GEYT Alibeck	37.9 N	58.1 E	array
45	Ukraine	AKASG Malin	50.4 N	29.1 E	array
46	United States of America	LJTX Lajitas, TX	29.3 N	103.7 W	array
47	United States of America	MNV Mina, NV	38.4 N	118.2 W	array
48	United States of America	PIWY Pinedale, WY	42.8 N	109.6 W	array
49	United States of America	ELAK Eielson, AK	64.8 N	146.9 W	array
50	United States of America	VNDA Vanda, Antarctica	77.5 S	161.9 E	3-C

Key: 3-C > array: Indicates that the site could start operations in the International Monitoring System as a three-component station and be upgraded to an array at a later time.

Table 1-B List of Seismological Stations Comprising the Auxiliary Network

	State responsible for station	Location	Latitude	Longitude	Type
1	Argentina	CFA Coronel Fontana	31.6 S	68.2 W	3-C
2	Argentina	USHA Ushuaia	55.0 S	68.0 W	3-C
3	Armenia	GNI Garni	40.1 N	44.7 E	3-C
4	Australia	CTA Charters Towers, QLD	20.1 S	146.3 E	3-C
5	Australia	FITZ Fitzroy Crossing, WA	18.1 S	125.6 E	3-C
6	Australia	NWAO Narrogin, WA	32.9 S	117.2 E	3-C
7	Bangladesh	CIIT Chittagong	22.4 N	91.8 E	3-C

	State responsible for station	Location	Latitude	Longitude	Type
8	Bolivia	SIV San Ignacio	16.0 S	61.1 W	3-C
9	Botswana	LBTB Lobatse	25.0 S	25.6 E	3-C
10	Brazil	PTGA Pitinga	0.7 S	60.0 W	3-C
11	Brazil	RGNB Rio Grande do Norte	6.9 S	37.0 W	3-C
12	Canada	FRB Iqaluit, N.W.T.	63.7 N	68.5 W	3-C
13	Canada	DLBC Dease Lake, B.C.	58.4 N	130.0 W	3-C
14	Canada	SADO Sadowa, Ont.	44.8 N	79.1 W	3-C
15	Canada	BBB Bella Bella, B.C.	52.2 N	128.1 W	3-C
16	Canada	MBC Mould Bay, N.W.T.	76.2 N	119.4 W	3-C
17	Canada	INK Inuvik, N.W.T.	68.3 N	133.5 W	3-C
18	Chile	RPN Easter Island	27.2 S	109.4 W	3-C
19	Chile	LVC Limon Verde	22.6 S	68.9 W	3-C
20	China	BJT Baijiatuan	40.0 N	116.2 E	3-C
21	China	KMI Kunming	25.2 N	102.8 E	3-C
22	China	SSE Sheshan	31.1 N	121.2 E	3-C
23	China	XAN Xi'an	34.0 N	108.9 E	3-C
24	Cook Islands	RAR Rarotonga	21.2 S	159.8 W	3-C
25	Costa Rica	JTS Las Juntas de Abangares	10.3 N	85.0 W	3-C
26	Czech Republic	VRAC Vranov	49.3 N	16.6 E	3-C
27	Denmark	SFJ Søndre Strømfjord, Greenland	67.0 N	50.6 W	3-C
28	Djibouti	ATD Arta Tunnel	11.5 N	42.9 E	3-C
29	Egypt	KEG Kottamya	29.9 N	31.8 E	3-C

	State responsible for station	Location	Latitude	Longitude	Type
30	Ethiopia	FURI Furi	8.9 N	38.7 E	3-C
31	Fiji	MSVF Monasavu, Viti Levu	17.8 S	178.1 E	3-C
32	France	NOUC Port Laguerre, New Caledonia	22.1 S	166.3 E	3-C
33	France	KOG Kourou, French Guiana	5.2 N	52.7 W	3-C
34	Gabon	BAMB Bambay	1.7 S	13.6 E	3-C
35	Germany/South Africa	— SANA E Station, Antarctica	71.7 S	2.9 W	3-C
36	Greece	IDI Anogia, Crete	35.3 N	24.9 E	3-C
37	Guatemala	RDG Rabir	15.0 N	90.5 W	3-C
38	Iceland	BORG Borgarnes	64.8 N	21.3 W	3-C
39	To be determined	To be determined	To be determined	To be determined	To be determined
40	Indonesia	PACI Cibinong, Jawa Barat	6.5 S	107.0 E	3-C
41	Indonesia	JAY Jayapura, Irian Jaya	2.5 S	140.7 E	3-C
42	Indonesia	SWI Sorong, Irian Jaya	0.9 S	131.3 E	3-C
43	Indonesia	PSI Parapat, Sumatera	2.7 N	98.9 E	3-C
44	Indonesia	KAPI Kappang, Sulawesi Selatan	5.0 S	119.8 E	3-C
45	Indonesia	KUG Kupang, Nusatenggara Timur	10.2 S	123.6 E	3-C
46	Iran (Islamic Republic of)	KRM Kerman	30.3 N	57.1 E	3-C
47	Iran (Islamic Republic of)	MSN Masjed-e-Soleyman	31.9 N	49.3 E	3-C
48	Israel	MBH Eilat	29.8 N	34.9 E	3-C
49	Israel	PARD Parod	32.6 N	35.3 E	array
50	Italy	ENAS	37.5 N	14.3 E	3-C

	State responsible for station	Location	Latitude	Longitude	Type
		Enna, Sicily			
51	Japan	JNU Ohita, Kyushu	33.1 N	130.9 E	3-C
52	Japan	JOW Kunigami, Okinawa	26.8 N	128.3 E	3-C
53	Japan	JHJ Hachijojima, Izu Islands	33.1 N	139.8 E	3-C
54	Japan	JKA Kamikawa-asahi, Hokkaido	44.1 N	142.6 E	3-C
55	Japan	JCJ Chichijima, Ogasawara	27.1 N	142.2 E	3-C
56	Jordan	--- Ashqof	32.5 N	37.6 E	3-C
57	Kazakstan	BRVK Borovoye	53.1 N	70.3 E	array
58	Kazakstan	KURK Kurchatov	50.7 N	78.6 E	array
59	Kazakstan	AKTO Aktyubinsk	50.4 N	58.0 E	3-C
60	Kyrgyzstan	AAK Ala-Archa	42.6 N	74.5 E	3-C
61	Madagascar	TAN Antananarivo	18.9 S	47.6 E	3-C
62	Mali	KOWA Kowa	14.5 N	4.0 W	3-C
63	Mexico	TEYM Tepich, Yucatan	20.2 N	88.3 W	3-C
64	Mexico	TUVM Tuzandepeti, Veracruz	18.0 N	94.4 W	3-C
65	Mexico	LPBM La Paz, Baja California Sur	24.2 N	110.2 W	3-C
66	Morocco	MDT Midelt	32.8 N	4.6 W	3-C
67	Namibia	TSUM Tsumeb	19.1 S	17.4 E	3-C
68	Nepal	EVN Everest	28.0 N	86.8 E	3-C
69	New Zealand	EWZ Erewhon, South Island	43.5 S	170.9 E	3-C
70	New Zealand	RAO Raoul Island	29.2 S	177.9 W	3-C
71	New Zealand	URZ Urewera, North Island	38.3 S	177.1 E	3-C

	State responsible for station	Location	Latitude	Longitude	Type
72	Norway	SPITS Spitsbergen	78.2 N	16.4 E	array
73	Norway	JMI Jan Mayen	70.9 N	8.7 W	3-C
74	Oman	WSAR Wadi Sarin	23.0 N	58.0 E	3-C
75	Papua New Guinea	PMG Port Moresby	9.4 S	147.2 E	3-C
76	Papua New Guinea	BIAL Bialla	5.3 S	151.1 E	3-C
77	Peru	CAJP Cajamarca	7.0 S	78.0 W	3-C
78	Peru	NNA Nana	12.0 S	76.8 W	3-C
79	Philippines	DAV Davao, Mindanao	7.1 N	125.6 E	3-C
80	Philippines	TGY Tagaytay, Luzon	14.1 N	120.9 E	3-C
81	Romania	MLR Muntele Rosu	45.5 N	25.9 E	3-C
82	Russian Federation	KIRV Kirov	58.6 N	49.4 E	3-C
83	Russian Federation	KIVO Kislovodsk	44.0 N	42.7 E	array
84	Russian Federation	OBN Obninsk	55.1 N	36.6 E	3-C
85	Russian Federation	ARU Arti	56.4 N	58.6 E	3-C
86	Russian Federation	SEY Seymchan	62.9 N	152.4 E	3-C
87	Russian Federation	TLY Talaya	51.7 N	103.6 E	3-C
88	Russian Federation	YAK Yakutsk	62.0 N	129.7 E	3-C
89	Russian Federation	URG Urgal	51.1 N	132.3 E	3-C
90	Russian Federation	BIL Bilibino	68.0 N	166.4 E	3-C
91	Russian Federation	TIXI Tiksi	71.6 N	128.9 E	3-C
92	Russian Federation	YSS Yuzhno-Sakhalinsk	47.0 N	142.8 E	3-C
93	Russian Federation	MA2 Magadan	59.6 N	150.8 E	3-C
94	Russian Federation	ZIL	53.9 N	57.0 E	3-C

	State responsible for station	Location	Latitude	Longitude	Type
		Zilim			
95	Samoa	AFI Afiamalu	13.9 S	171.8 W	3-C
96	Saudi Arabia	RAYN Ar Rayn	23.6 N	45.6 E	3-C
97	Senegal	MBO Mbour	14.4 N	17.0 W	3-C
98	Solomon Islands	HNR Honiara, Guadalcanal	9.4 S	160.0 E	3-C
99	South Africa	SUR Sutherland	32.4 S	20.8 E	3-C
100	Sri Lanka	COC Colombo	6.9 N	79.9 E	3-C
101	Sweden	HFS Hagfors	60.1 N	13.7 E	array
102	Switzerland	DAVOS Davos	46.8 N	9.8 E	3-C
103	Uganda	MBRU Mbarara	0.4 S	30.4 E	3-C
104	United Kingdom	EKA Eskdalemuir	55.3 N	3.2 W	array
105	United States of America	GUMO Guam, Marianas Islands	13.6 N	144.9 E	3-C
106	United States of America	PMSA Palmer Station, Antarctica	64.8 S	64.1 W	3-C
107	United States of America	TKL Tuckaleechee Caverns, TN	35.7 N	83.8 W	3-C
108	United States of America	PFCA Piñon Flat, CA	33.6 N	116.5 W	3-C
109	United States of America	YBH Yreka, CA	41.7 N	122.7 W	3-C
110	United States of America	KDC Kodiak Island, AK	57.8 N	152.5 W	3-C
111	United States of America	ALQ Albuquerque, NM	35.0 N	106.5 W	3-C
112	United States of America	ATTU Attu Island, AK	52.8 N	172.7 E	3-C
113	United States of America	ELK Elko, NV	40.7 N	115.2 W	3-C
114	United States of America	SPA South Pole, Antarctica	90.0 S	--	3-C
115	United States of America	NEW Newport, WA	48.3 N	117.1 W	3-C

	State responsible for station	Location	Latitude	Longitude	Type
116	United States of America	SJG San Juan, PR	18.1 N	66.2 W	3-C
117	Venezuela	SDV Santo Domingo	8.9 N	70.6 W	3-C
118	Venezuela	PCRV Puerto la Cruz	10.2 N	64.6 W	3-C
119	Zambia	LSZ Lusaka	15.3 S	28.2 E	3-C
120	Zimbabwe	BUL Bulawayo	to be advised	to be advised	3-C

Table 2-A List of Radionuclide Stations

	State responsible for station	Location	Latitude	Longitude
1	Argentina	Buenos Aires	34.0 S	58.0W
2	Argentina	Salta	24.0 S	65.0 W
3	Argentina	Bariloche	41.1 S	71.3 W
4	Australia	Melbourne, VIC	37.5 S	144.6 E
5	Australia	Mawson, Antarctica	67.6 S	62.5 E
6	Australia	Townsville, QLD	19.2 S	146.8 E
7	Australia	Macquarie Island	54.0 S	159.0 E
8	Australia	Cocos Islands	12.0 S	97.0 E
9	Australia	Darwin, NT	12.4 S	130.7 E
10	Australia	Perth, WA	31.9 S	116.0 E
11	Brazil	Rio de Janeiro	22.5 S	43.1 W
12	Brazil	Recife	8.0 S	35.0 W
13	Cameroon	Douala	4.2 N	9.9 E
14	Canada	Vancouver, B.C.	49.3 N	123.2 W
15	Canada	Resolute, N.W.T.	74.7 N	94.9 W
16	Canada	Yellowknife, N.W.T.	62.5 N	114.5 W
17	Canada	St. John's, N.L.	47.0 N	53.0 W
18	Chile	Punta Arenas	53.1 S	70.6 W
19	Chile	Hanga Roa, Easter Island	27.1 S	108.4 W
20	China	Beijing	39.8 N	116.2 E
21	China	Lanzhou	35.8 N	103.3 E
22	China	Guangzhou	23.0 N	113.3 E
23	Cook Islands	Rarotonga	21.2 S	159.8 W
24	Ecuador	Isla San Cristóbal, Galápagos Islands	1.0 S	89.2 W

	State responsible for station	Location	Latitude	Longitude
25	Ethiopia	Filtu	5.5 N	42.7 E
26	Fiji	Nadi	18.0 S	177.5 E
27	France	Papeete, Tahiti	17.0 S	150.0 W
28	France	Pointe-à-Pitre, Guadeloupe	17.0 N	62.0 W
29	France	Réunion	21.1 S	55.6 E
30	France	Port-aux-Français, Kerguelen	49.0 S	70.0 E
31	France	Cayenne, French Guiana	5.0 N	52.0 W
32	France	Dumont d'Urville, Antarctica	66.0 S	140.0 E
33	Germany	Schauinsland/Freiburg	47.9 N	7.9 E
34	Iceland	Reykjavik	64.4 N	21.9 W
35	To be determined	To be determined	To be determined	To be determined
36	Iran (Islamic Republic of)	Tehran	35.0 N	52.0 E
37	Japan	Okinawa	26.5 N	127.9 E
38	Japan	Takasaki, Gunma	36.3 N	139.0 E
39	Kiribati	Kiritimati	2.0 N	157.0 W
40	Kuwait	Kuwait City	29.0 N	48.0 E
41	Libya	Misratah	32.5 N	15.0 E
42	Malaysia	Kuala Lumpur	2.6 N	101.5 E
43	Mauritania	Nouakchott	18.0 N	17.0 W
44	Mexico	Baja California	28.0 N	113.0 W
45	Mongolia	Ulaanbaatar	47.5 N	107.0 E
46	New Zealand	Chatham Island	44.0 S	176.5 W
47	New Zealand	Kaitaia	35.1 S	173.3 E
48	Niger	Bilma	18.0 N	13.0 E
49	Norway	Spitsbergen	78.2 N	16.4 E
50	Panama	Panama City	8.9 N	79.6 W
51	Papua New Guinea	New Hanover	3.0 S	150.0 E
52	Philippines	Quezon City	14.5 N	121.0 E
53	Portugal	Ponta Delgada, São Miguel, Azores	37.4 N	25.4 W
54	Russian Federation	Kirov	58.6 N	49.4 E
55	Russian Federation	Norilsk	69.0 N	88.0 E
56	Russian Federation	Peleduy	59.6 N	112.6 E
57	Russian Federation	Bilibino	68.0 N	166.4 E
58	Russian Federation	Ussuriysk	43.7 N	131.9 E
59	Russian Federation	Zalesovo	53.9 N	84.8 E
60	Russian Federation	Petropavlovsk-Kamchatskiy	53.1 N	158.8 E
61	Russian Federation	Dubna	56.7 N	37.3 E
62	South Africa	Marion Island	46.5 S	37.0 E

	State responsible for station	Location	Latitude	Longitude
63	Sweden	Stockholm	59.4 N	18.0 E
64	Tanzania	Dar es Salaam	6.0 S	39.0 E
65	Thailand	Bangkok	13.8 N	100.5 E
66	United Kingdom	BIOT/Chagos Archipelago	7.0 S	72.0 E
67	United Kingdom	St. Helena	16.0 S	6.0 W
68	United Kingdom	Tristan da Cunha	37.0 S	12.3 W
69	United Kingdom	Halley, Antarctica	76.0 S	28.0 W
70	United States of America	Sacramento, CA	38.7 N	121.4 W
71	United States of America	Sand Point, AK	55.0 N	160.0 W
72	United States of America	Melbourne, FL	28.3 N	80.6 W
73	United States of America	Palmer Station, Antarctica	64.5 S	64.0 W
74	United States of America	Ashland, KS	37.2 N	99.8 W
75	United States of America	Charlottesville, VA	38.0 N	78.0 W
76	United States of America	Salchaket, AK	64.4 N	147.1 W
77	United States of America	Wake Island	19.3 N	166.6 E
78	United States of America	Midway Islands	28.0 N	177.0 W
79	United States of America	Oahu, HI	21.5 N	158.0 W
80	United States of America	Upi, Guam	13.7 N	144.9 E

Table 2-B List of Radionuclide Laboratories

	State responsible for Laboratory	Name and place of laboratory
1	Argentina	National Board of Nuclear Regulation Buenos Aires
2	Australia	Australian Radiation Laboratory Melbourne, VIC
3	Austria	Austrian Research Center Seibersdorf
4	Brazil	Institute of Radiation Protection and Dosimetry Rio de Janeiro
5	Canada	Health Canada Ottawa, Ont.
6	China	Beijing
7	Finland	Centre for Radiation and Nuclear Safety Helsinki
8	France	Atomic Energy Commission Monthéry
9	Israel	Soreq Nuclear Research Centre Yavne
10	Italy	Laboratory of the National Agency for the Protection of the Environment

	State responsible for Laboratory	Name and place of laboratory
		Rome
11	Japan	Japan Atomic Energy Research Institute Tokai, Ibaraki
12	New Zealand	National Radiation Laboratory Christchurch
13	Russian Federation	Central Radiation Control Laboratory, Ministry of Defence Special Verification Service Moscow
14	South Africa	Atomic Energy Corporation Pelindaba
15	United Kingdom	AWE Blacknest Chilton
16	United States of America	McClellan Central Laboratories Sacramento, CA

Table 3 List of Hydroacoustic Stations

	State responsible for station	Location	Latitude	Longitude	Type
1	Australia	Cape Leeuwin, WA	34.4 S	115.1 E	Hydrophone
2	Canada	Queen Charlotte Islands, B.C.	53.3 N	132.5 W	T-phase
3	Chile	Juan Fernández Island	33.7 S	78.8 W	Hydrophone
4	France	Crozet Islands	46.5 S	52.2 E	Hydrophone
5	France	Guadeloupe	16.3 N	61.1 W	T-phase
6	Mexico	Clarión Island	18.2 N	114.6 W	T-phase
7	Portugal	Flores	39.3 N	31.3 W	T-phase
8	United Kingdom	BIOT/Chagos Archipelago	7.3 S	72.4 E	Hydrophone
9	United Kingdom	Tristan da Cunha	37.2 S	12.5 W	T-phase
10	United States of America	Ascension	8.0 S	14.4 W	Hydrophone
11	United States of America	Wake Island	19.3 N	166.6 E	Hydrophone

Table 4 List of Infrasound Stations

	State responsible for station	Location	Latitude	Longitude
1	Argentina	Paso Flores	40.7 S	70.6 W
2	Argentina	Ushuaia	55.0 S	68.0 W
3	Australia	Davis Base, Antarctica	68.4 S	77.6 E
4	Australia	Narrogin, WA	32.9 S	117.2 E
5	Australia	Hobart, TAS	42.1 S	147.2 E
6	Australia	Cocos Islands	12.3 S	97.0 E
7	Australia	Warramunga, NT	19.9 S	134.3 E
8	Bolivia	La Paz	16.3 S	68.1 W
9	Brazil	Brasilia	15.6 S	48.0 W
10	Canada	Lac du Bonnet, Man.	50.2 N	95.9 W
11	Cape Verde	Cape Verde Islands	16.0 N	24.0 W
12	Central African Republic	Bangui	5.2 N	18.4 E
13	Chile	Easter Island	27.0 S	109.2 W
14	Chile	Juan Fernández Island	33.8 S	80.7 W
15	China	Beijing	40.0 N	116.0 E
16	China	Kunming	25.0 N	102.8 E
17	Côte d'Ivoire	Dimbokro	6.7 N	4.9 W
18	Denmark	Dundas, Greenland	76.5 N	68.7 W
19	Djibouti	Djibouti	11.3 N	43.5 E
20	Ecuador	Galápagos Islands	0.0 N	91.7 W
21	France	Marquesas Islands	10.0 S	140.0 W
22	France	Port LaGuerre, New Caledonia	22.1 S	166.3 E
23	France	Kerguelen	49.2 S	69.1 E
24	France	Tahiti	17.6 S	149.6 W
25	France	Kourou, French Guiana	5.2 N	52.7 W
26	Germany	Freyung	48.9 N	13.7 E
27	Germany	Georg von Neumayer, Antarctica	70.6 S	8.4 W
28	To be determined	To be determined	To be determined	To be determined
29	Iran (Islamic Republic of)	Tehran	35.7 N	51.4 E
30	Japan	Tsukuba	36.0 N	140.1 E
31	Kazakstan	Aktyubinsk	50.4 N	58.0 E
32	Kenya	Kilimanbogo	1.3 S	36.8 E

	State responsible for station	Location	Latitude	Longitude
33	Madagascar	Antananarivo	18.8 S	47.5 E
34	Mongolia	Javhlant	48.0 N	106.8 E
35	Namibia	Tsumeb	19.1 S	17.4 E
36	New Zealand	Chatham Island	44.0 S	176.5 W
37	Norway	Karasjok	69.5 N	25.5 E
38	Pakistan	Rahimyar Khan	28.2 N	70.3 E
39	Palau	Palau	7.5 N	134.5 E
40	Papua New Guinea	Rabaul	4.1 S	152.1 E
41	Paraguay	Villa Florida	26.3 S	57.3 W
42	Portugal	Azores	37.8 N	25.5 W
43	Russian Federation	Dubna	56.7 N	37.3 E
44	Russian Federation	Petropavlovsk- Kamchatskiy	53.1 N	158.8 E
45	Russian Federation	Ussuriysk	43.7 N	131.9 E
46	Russian Federation	Zalesovo	53.9 N	84.8 E
47	South Africa	Boshof	28.6 S	25.4 E
48	Tunisia	Thala	35.6 N	8.7 E
49	United Kingdom	Tristan da Cunha	37.0 S	12.3 W
50	United Kingdom	Ascension	8.0 S	14.3 W
51	United Kingdom	Bermuda	32.0 N	64.5 W
52	United Kingdom	BIOT/Chagos Archipelago	5.0 S	72.0 E
53	United States of America	Eielson, AK	64.8 N	146.9 W
54	United States of America	Siple Station, Antarctica	75.5 S	83.6 W
55	United States of America	Windless Bight, Antarctica	77.5 S	161.8 E
56	United States of America	Newport, WA	48.3 N	117.1 W
57	United States of America	Piñon Flat, CA	33.6 N	116.5 W
58	United States of America	Midway Islands	28.1N	177.2 W
59	United States of America	Hawaii, HI	19.6 N	155.3 W
60	United States of America	Wake Island	19.3 N	166.6 E

ANNEX 2 TO THE PROTOCOL

List of Characterization Parameters for International Data Centre Standard Event Screening

1. The International Data Centre standard event screening criteria shall be based on the standard event characterization parameters determined during the combined processing of data from all the monitoring technologies in the International Monitoring System. Standard event screening shall make use of both global and supplementary screening criteria to take account of regional variations where applicable.
2. For events detected by the International Monitoring System seismic component, the following parameters, inter alia, may be used:
 - location of the event;
 - depth of the event;
 - ratio of the magnitude of surface waves to body waves;
 - signal frequency content;
 - spectral ratios of phases;
 - spectral scalloping;
 - first motion of the P-wave;
 - focal mechanism;
 - relative excitation of seismic phases;
 - comparative measures to other events and groups of events; and
 - regional discriminants where applicable.
3. For events detected by the International Monitoring System hydroacoustic component, the following parameters, inter alia, may be used:
 - signal frequency content including corner frequency, wide-band energy, and mean centre frequency and bandwidth;
 - frequency-dependent duration of signals;
 - spectral ratio; and
 - indications of bubble-pulse signals and bubble-pulse delay.
4. For events detected by the International Monitoring System infrasound component, the following parameters, inter alia, may be used:
 - signal frequency content and dispersion;
 - signal duration; and
 - peak amplitude.
5. For events detected by the International Monitoring System radionuclide component, the following parameters, inter alia, may be used:
 - concentration of background natural and man-made radionuclides;
 - concentration of specific fission and activation products outside normal observations; and
 - ratios of one specific fission and activation product to another.

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