

Tom Sauer

NUCLEAR ARMS CONTROL

Nuclear Deterrence in the
Post-Cold War Period



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First published in Great Britain 1998 by
MACMILLAN PRESS LTD
Houndmills, Basingstoke, Hampshire RG21 6XS and London
Companies and representatives throughout the world

A catalogue record for this book is available from the British Library.

ISBN 978-1-349-26731-6 ISBN 978-1-349-26729-3 (eBook)
DOI 10.1007/978-1-349-26729-3



First published in the United States of America 1998 by
ST. MARTIN'S PRESS, INC.,
Scholarly and Reference Division,
175 Fifth Avenue, New York, N.Y. 10010

ISBN 978-0-312-21196-7

Library of Congress Cataloging-in-Publication Data
Sauer, Tom.

Nuclear arms control : nuclear deterrence in the post-cold war period
/ Tom Sauer.

p. cm.

Includes bibliographical references and index.

ISBN 978-0-312-21196-7 (cloth)

1. Nuclear arms control. 2. Nuclear nonproliferation. I. Title.

KZ5665.S28 1997

341.7'34—dc21

97-38222

CIP

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Softcover reprint of the hardcover 1st edition 1998

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07 06 05 04 03 02 01 00 99 98

To Astrid and to my parents, Rina and Frank

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Acknowledgements

I have been very fortunate in my critics: Patrick Nopens, Wilfried Van Hoeck, and especially Patrick Morgan, for their valuable suggestions.

I would also like to thank the following people who have helped me in diverse ways: Richard Baldwin, Werner Bauwens, Gregory Schulte, Lamberto Zannier, Jos De la Haye, Stephan de Spiegeleire, Roger Busby, Eddy Hartog, Bart Ouvry, Steve Miller, Peter Saverys, Jef Segers, Richard Latter, Harald Müller, Stef Smet, Rebecca Johnson, Edmond Poulet, Eloi Glorieux, Chris Mulready, Jan vande Putte and Matthew Bunn. The views expressed in this work are solely those of the author and should not be ascribed to the persons acknowledged above.

Special thanks are due to Herman Vos, Christian Franck, Luc Reyhler and Nicholas Wheeler. Their teaching was extremely stimulating.

A first draft of this study was prepared under the auspices of a NATO Individual Research Fellowship.

Acronyms

ABM	Anti-Ballistic Missile
ACDA	Arms Control and Disarmament Agency
BMD	Ballistic Missile Defence
CBW	Chemical/Biological Weapons
CIA	Central Intelligence Agency
CSBM	Confidence and Security Building Measure
CTBT	Comprehensive Test Ban Treaty
CWC	Chemical Weapons Convention
DEFCON	Defense Condition
DIA	Defense Intelligence Agency
EU	European Union
HEU	Highly Enriched Uranium
IAEA	International Atomic Energy Agency
ICBM	Intercontinental Ballistic Missile
IFOR	Implementation Force (Bosnia)
IGC	Intergovernmental Conference (EU)
INF	Intermediate-range Nuclear Forces
kg	Kilogram
kt	Kiloton
LEU	Low Enriched Uranium
MOX	Mixed Oxide
mt	Megaton
MTCR	Missile Technology Control Regime
NASA	National Aeronautics and Space Administration
NATO	North Atlantic Treaty Organization
NNWS	Non-Nuclear Weapon State
NORAD	North American Air Defense Command
NPG	Nuclear Planning Group
NPT	Nuclear Nonproliferation Treaty
NSC	National Security Council
NSG	Nuclear Suppliers Group
NWC	Nuclear Weapons Convention
NWFW	Nuclear Weapon Free World
NWFZ	Nuclear Weapon Free Zone
NWS	Nuclear Weapon States
Prepcom	Preparatory Committee

SAC	Strategic Air Command
SDI	Strategic Defense Initiative
SLBM	Sea-Launched Ballistic Missile
START	Strategic Arms Reduction Talks
THAAD	Theater High Altitude Area Defense
TMD	Theater Missile Defense
TNT	Trinitrotoluene
UK	United Kingdom
UN	United Nations
US	United States
USIS	United States Information Service
WEU	Western European Union

Introduction

Nuclear weapons have always worked upon the imagination. Proponents regard nuclear weapons as the epitome of technological know-how and the most appropriate instrument to prevent war. Opponents, on the other hand, point out the potential catastrophic consequences of the use of nuclear weapons. Worldwide reaction to the resumption of French nuclear tests during the summer of 1995 illustrated this sensitivity.

The debate between critics and advocates of nuclear weapons, however, seems outdated as a result of the end of the Cold War. Today, the US and Russia are progressively dismantling their enormous nuclear arsenals.

The key question, which is often neglected and will be analysed in this volume, is whether this evolution of nuclear disarmament is irreversible. Are we putting the concept of nuclear deterrence between brackets in order to delete it later? Or do we – the Nuclear Weapon States¹ and their allies – still regard nuclear weapons as a vital instrument of our security policy?

In Chapter 1 the concept of nuclear deterrence will be discussed in detail. What are the primary conditions for nuclear deterrence? What about deterrence against nuclear terrorists, for instance? Or so-called ‘irrational’ enemies? Are nuclear weapons versus a conventional, chemical or biological attack as credible as versus a nuclear attack? Does nuclear deterrence not enhance the existing distrust between rivals? How great is the chance that a horizontal and/or vertical arms race is looming? Last but not least, what about the possibility of accidental or unauthorized use of nuclear weapons?

The fall of the Berlin Wall and the implosion of the Soviet Union marked the end of a 40-year-old bipolar world system. The degree to which the stability during this period was due to nuclear weapons will never be known.

There is however no doubt that the *new* world order has not brought the expected period of peace and stability.

One of the largest potential threats to international peace and security today is the spread of weapons of mass destruction, and in particular the proliferation of nuclear weapons.

Chapter 2 consists mainly of finding an appropriate response to the further spread of nuclear weapons. The current nonproliferation regime – of which the Nuclear Nonproliferation Treaty (NPT) is the cornerstone – certainly makes it much more difficult for potential proliferators, but the question is whether it can guarantee a status quo. Does nuclear deterrence offer a credible answer to proliferation?

The international society of states must choose between living in a world with more nuclear weapon states, or eliminating nuclear weapons.

In Chapter 3 the following questions are posed: is an NFWF desirable? The pros and cons will be discussed. Is an NFWF feasible? What are the primary conditions for an NFWF? And what positive steps have to be taken in the short and medium term?

In May 1995 the NPT was extended for an indefinite period. The Non-Nuclear Weapon States agreed to an indefinite extension on the condition that the Nuclear Weapon States would support a series of ‘principles and objectives’. One of these politically binding objectives is the following: ‘The determined pursuit by the Nuclear Weapon States of systematic and progressive efforts to reduce nuclear weapons globally, with the ultimate goal of eliminating those weapons, and by all states of general and complete disarmament under strict and effective international control.’

Yet it appears that this ‘determined pursuit’ does not exist. The United States and Russia still possess more than 35 000 nuclear weapons in total. Research and development of new nuclear warheads and delivery systems continues. The nuclear doctrines of the Nuclear Weapon States have undergone no significant modifications since the end of the Cold War. The NWS (except China) are still prepared to use nuclear weapons in a crisis, even if the opponent has not used such weapons first. Last but not least, the NWS still refuse to commence negotiations for a Nuclear Weapons Convention. It is therefore not by chance

that the famous doomsday clock of the *Bulletin of the Atomic Scientists* (established in 1947) moved from 17 to 14 minutes to midnight at the end of 1995.

This study tries to make clear why a Nuclear Weapon Free World is ultimately the only viable security regime and why this is in the interest of all states, including the Nuclear Weapon States.

1 Nuclear Deterrence Revisited

1.1 THE NUCLEAR PARADOX

Deterrence is defined as the 'act or process of deterring; especially the restraint and discouragement of crime by fear (as by the exemplary punishment of convicted offenders)'.¹ In international politics deterrence is used as an instrument to convince other states that the use of violence is not appropriate or worthwhile.² *Nuclear* deterrence is the threat of nuclear attack as retaliation, to prevent the opponent from using violence against the vital interests of the deterrer. The military doctrines of the Nuclear Weapon States are (still) based on this principle.

The primary purpose of nuclear weapons is in practice not their use but their deterrent effect, since their use equals massive destruction. Opponents and proponents of nuclear deterrence are agreed on that. Bernard Brodie, a nuclear strategist, stated as long ago as 1946: 'Thus far, the chief purpose of our military establishment has been to win wars. From now on, its chief purpose must be to avert them. It can have no other useful purpose.'³

According to advocates of nuclear weapons, nuclear deterrence has a stabilizing effect, since neither side will risk provoking a nuclear counterattack. They believe nuclear deterrence is the ultimate device for preserving peace.⁴

However, nuclear deterrence is a violent paradox: its purpose is to threaten to launch nuclear weapons in order not to launch them. The threat to use nuclear weapons is incredible if one is not prepared to use them.

It should also be pointed out that throughout nuclear history there have always been advocates who wanted nuclear weapons to be seen as normal. According to this 'third' school, nuclear weapons can and should actually be used, albeit on a small scale.⁵ This line of thinking does not

correspond with the concept of nuclear deterrence, and as a consequence will only be touched upon marginally.

Before analysing in detail the basic conditions for nuclear deterrence, we need to answer the following question: what happens when nuclear deterrence fails and nuclear weapons are used?

What are the Consequences of Using Nuclear Weapons? Right from the beginning, it should be made clear that the consequences of using nuclear weapons are of an entirely different magnitude to using conventional weapons. The differences are situated most notably in destructive capacity and in radioactive fallout. The average force of the current generation of strategic nuclear weapons is about 500 kilotons (or 500 000 tons of TNT), which corresponds roughly to two million powerful conventional bombs. One such hydrogen or thermonuclear bomb is sufficient to destroy any city completely, regardless of its size. 'Little Boy', the rudimentary Hiroshima bomb, had a force of 14 kt and at one stroke killed 50 000 to 100 000 people (depending on the source) while thousands of others died later from diseases caused by the radioactive fallout. The largest atmospheric nuclear test ever took place on Novaya Zemlya in the former Soviet Union and had a force of 56 megatons (or 56 000 kt). By comparison, during the Second World War the total exploded was 3 mt.⁶

Today there are still 16 000 *strategic* nuclear weapons deployed (equalling nearly 8000 mt in total). In accordance with START II, 7000 strategic nuclear weapons in total will remain *deployed* (at least until the year 2003). At that time, the nuclear arsenal of the US, for instance, will number as follows:⁷

- 86 bombers (66 B-52s and 20 B-2 Stealth bombers) carrying a total of 1350 nuclear weapons;
- 14 Trident nuclear submarines (with D-5 missiles) each carrying 120 nuclear warheads;⁸
- 450–500 Minuteman ICBMs.

Many more strategic warheads – another 13 000 – will be stockpiled but not deployed.⁹

Besides the strategic nuclear weapons, there are still a total of at least 19 000 *tactical* or sub-strategic nuclear weapons – most of them of a force equalling that of the Hiroshima bomb – the vast majority of which are situated in Russia.

The highlight of the nuclear arms race was reached in 1988 when a total of 55 000 nuclear weapons (24 000 of which were strategic nuclear weapons) were deployed. Despite the geostrategic events of 1989 the end of the overkill capacity is still not in sight.

Massive use of this destructive force would mean the end of all life on earth.¹⁰ Some scientists use the term ‘nuclear winter’ in the case of the use of 300 mt. But even the limited use of nuclear weapons might have severe consequences for future generations. The International Court of Justice in its deliberations about the legality of the use or threat of use of nuclear weapons concluded in July 1996 in this regard: ‘The use of nuclear weapons would be a serious danger to future generations. Ionizing radiation has the potential to damage the future environment, food and marine ecosystem, and to cause genetic defects and illness in future generations.’ The limited use of nuclear weapons would also signify the end of the existing nuclear taboo which in its turn would have serious consequences for the existing nuclear disarmament and nonproliferation regime. Finally, it might stimulate other states to use nuclear weapons as well. The latter might enhance the chance of a large-scale nuclear war.

1.2 CONDITIONS FOR NUCLEAR DETERRENCE

Deterrence does not work automatically. The same applies for nuclear deterrence. To repeat, nuclear deterrence is the threat of a nuclear attack as retaliation, to prevent the opponent from using violence against the vital interests of the one who deters.

To be effective nuclear deterrence must fulfil three basic conditions: (1) the opponent must be susceptible to deterrence; (2) the opponent must have vital interests; (3) the declared nuclear threat must be credible.

1.2.1 The Opponent must be Susceptible to Deterrence

Three categories of individuals are less likely to be deterred than others: (1) 'irrational' individuals; (2) fundamentalists; (3) risk-takers.

1.2.1.1 'Irrational' opponents

To be deterred one has to be aware of the consequences of one's behaviour, that is, able to *assess* the costs and benefits of one's action. 'Rational' individuals (in our terms) show these characteristics. Advocates of nuclear deterrence rightly assume that a rational opponent will soon find out that the negative consequences of a nuclear counterattack cancel out the possible advantages of any action against the vital interests of those possessing nuclear weapons.

However, not every individual always follows this logic. This category includes individuals psychologically disturbed or under the influence of alcohol, drugs and/or medication.

First, nuclear deterrence to prevent a state run by a psychologically disturbed leader from using force makes no sense, since that leader is probably not even conscious of the possible negative consequences of his actions. The chance is of course very small that political leaders are psychologically disturbed. But examples can be found. Some people refer to Hitler in this regard.

Second, individuals under the influence of excessive use of alcohol, drugs and/or medication are in most cases no longer capable of reasoning 'rationally'. Nuclear deterrence may have no effect in this case either. The possibility that individuals with such characteristics are becoming heads of state is higher than in the first category. One of the most striking examples of alcoholism was the situation of President Nixon at a certain moment during the 1973 Middle East crisis. As a result of the physical condition of the President, Secretary of State Kissinger and Secretary of Defense Schlesinger had to make the decision to launch a worldwide nuclear alarm without the knowledge of the President during the night of 24 October 1973.¹¹

1.2.1.2 Fundamentalists

Fundamentalists are willing to risk their lives and those of others for higher – read ideological or religious – interests.

Gregory Schulte, NATO's Nuclear Planning Director, agrees: 'It may be difficult to assess the personality and intentions of the leaders of proliferating states. We might even consider these leaders to be "irrational", at least by our standards.'¹² They know very well what they are doing, but they value 'life' (by our 'western' or 'modern' standards) differently. This has enormous consequences in the context of nuclear proliferation. Nuclear deterrence can simply not stop a nuclear kamikaze.

1.2.1.3 Risk-takers

By far the largest category that causes worry is that of the so-called risk-takers. In a sense, we are all risk-takers. But not everybody is prepared to take enormous risks – for whatever reason – to the same degree, especially when their own life and/or that of others is being put at risk. The risk-takers play at the edge of rationality. Carrying out an attack always involves a calculated risk. These calculations sometimes become miscalculations. Hitler's invasion of Russia in 1941 and Iraq's invasion of Kuwait in 1990 are clarifying examples. The Iraqi Scud attacks against Israel during the Gulf War were very risky as well. Could Saddam Hussein have been absolutely sure that Israel would not retaliate with nuclear weapons?

Miscalculations involving nuclear weapons may have grave consequences. Some heads of state, for instance, are more willing to run the risk of starting an attack with conventional weapons against a Nuclear Weapon State or of carrying out a so-called *first strike* – a surprise attack with nuclear weapons in order to wipe out the opponent's nuclear capability with one blow.

Advocates of nuclear deterrence argue that the possibility of miscalculations involving nuclear weapons is very small simply because of the possible consequences. The point here, however, is that even if the possibility is very small, it can never be excluded. 'Nuclear' risk-takers could speculate that the announced nuclear counterattack, for whatever reason, will not be carried out (e.g. because of non-proportionality, because of the risk of escalation or because one believes the other is simply bluffing).

The following examples prove that these are not just purely theoretical suppositions: in the Argentinian attack against

the British Falkland Islands in 1982, the combined Syrian-Egyptian attack against Israel in 1973,¹³ and during the Gulf War when Iraq fired Scud missiles on Israel, nuclear deterrence did not work.

Too Individualistic an Approach? One could generally criticize the above three categories by arguing that the decision to use nuclear weapons is not made by a single individual. This may be true, but it is not reassuring, as the following counter-arguments summarize:

(1) The decision of whether or not to use nuclear weapons is made by a small number of individuals. In some cases, as for instance on the Russian submarines, this authority is delegated to lower military levels. In this way the probability increases that individuals under the influence of alcohol, drugs or medication have to make the final decision.

Besides, we can ask ourselves how democratic all this is. Lifton and Falk are very clear: 'Being constantly ready to commit the nation (and the planet!) to a devastating war of annihilation in a matter of minutes on the basis of possibly incorrect computer-processed information or pathological traits among leaders creates a variety of structural necessities that contradict the spirit and substance of democratic governance: secrecy, lack of accountability, permanent emergency, concentration of authority, peacetime militarism, extensive apparatus of state intelligence and police.'¹⁴

(2) Even a small group of individuals does not guarantee a 'rational' decision. A decision-maker with fundamentalist aspirations, for instance, will not surround himself with individuals who have opposite ideological or religious beliefs. Furthermore, there is a real likelihood that we are dealing with an autocratic regime where no opposition is tolerated.

Even in democratic regimes, and especially in crisis situations, it happens that government leaders and their entourage are not (or are no longer) capable of jointly making a 'rational' choice. Janis defines it as 'a mode of thinking that people engage in when they are deeply involved in a cohesive in-group, when the members' strivings for unanimity override their motivation to realistically appraise

alternative courses of action' and calls this socio-psychological process 'groupthink'.¹⁵ He refers, among others, to non-nuclear decisions taken by the American President and his advisers during Pearl Harbor, the Korean and Vietnam wars and the invasion of the Bay of Pigs in Cuba in 1961.

(3) Finally, we need to point out some hazards of an organizational and sociological nature. Organizations – like individuals – are also prone to completely misjudge situations and hence end up with fatal decisions. The chance that decisions are taken in a non-rational way even increases just because of the internal structure of organizations.¹⁶ In this context, dangers linked with routine actions and incompatible objectives within organizations are frequently brought up.¹⁷

The way in which the Egyptian Air Force was taken by surprise during the 1967 crisis is a good example of (complex) routine actions. During this crisis the Egyptian Air Force expected a surprise attack by Israel during the early morning. As a consequence, the troops were being kept at the highest alert at that time. Then, at 7.30 am, the pilots took breakfast. After a while the Israelis were on to this and consequently attacked at 7.45 am, destroying the Egyptian Air Force in one stroke.¹⁸

The accident with the Space Shuttle *Challenger* in 1986, on the other hand, is an example of how two incompatible objectives of an organization can lead to catastrophe. Before the launch, experts made clear to NASA's flight control that the safety of the shuttle's launch had been endangered as the night before there had been frost. Nevertheless, flight control were under pressure not to have yet another delay (which threatened to lead to funding cuts from Congress) and refused to cancel the flight...¹⁹

Nothing indicates that such problems, inherent in the nature of an organization can or will not occur with regard to the use of nuclear weapons.

1.2.1.4 Conclusion

Neo-realists like Kenneth Waltz argue that neither the characteristics of individual decision-makers nor the nature of the political regime affect nuclear deterrence since *any state* (automatically) will be deterred by a credible nuclear arsenal.

The possibility that nuclear deterrence will fail is small indeed. After all, the vast majority of the decision-makers act rationally. The risk of a nuclear counterattack is too large to them.

However, the possibility that nuclear deterrence will fail because of miscalculations can never be excluded. Here we should consider government leaders who are psychologically disturbed, under the influence of alcohol, drugs and/or medication, willing to risk their own lives and those of others for ideological or religious reasons or, despite the possible dangers, simply dare to risk an attack, or a combination of these factors. The fact that in most cases more than one individual is empowered to launch nuclear weapons reduces the possibility of irrational use but is no guarantee. Here the danger of *groupthink* and other risks inherent in decision-making processes within an organization have been demonstrated.

The only valid conclusion is that the possibility of nuclear deterrence failing has always existed, still exists, and will always exist as long as the Nuclear Weapon States and their allies hold on to nuclear devices and to the idea of nuclear deterrence. The longer one counts on nuclear deterrence the greater the possibility that individuals who belong to any of the three above-mentioned categories will decide to launch nuclear weapons, and thus the greater the possibility that nuclear deterrence will fail.

1.2.2 Vital Interests must be Threatened

According to our definition, vital interests of a state must be threatened before one can speak of nuclear deterrence.

Nuclear deterrence against terrorists, for instance, does not correspond to this criterion. Therefore, and this is not trivial, nuclear deterrence can by no means be justified by referring to the threat of nuclear terrorism.

The major problem however is that the opponent never fully knows what is meant by 'vital interests'. France, for instance, states that it cannot precisely describe its vital interests.²⁰ Some interests are vital; others are 'less vital'. States can also alter their meaning of what constitutes vital interests, for instance during a crisis (as the US did in Vietnam).

Advocates of nuclear deterrence argue that this uncertainty *contributes* to the stabilizing effect of nuclear weapons. Nobody will take the risk. Critics object that not everybody will *perceive* vital interests as such. It depends on the degree of risk one is willing to take and on the credibility of the declared nuclear strategy. Despite a nuclear deterrent, this kind of uncertainty may well result in an attack, for instance, with conventional weapons (hoping that the other will not retaliate with nuclear weapons). The best example is the Argentinian attack against the Falklands in 1982. The Argentinian 'political' decision-makers – who were generals – probably (mis)perceived the Falklands as not constituting a vital interest for the UK.

1.2.3 A Credible Nuclear Strategy

Nuclear deterrence is not effective if the opponent does not perceive the threat as being authentic. The perception of the opponent is of crucial importance to bring about the so-called stabilizing effect of nuclear deterrence.

Clear communication is a prerequisite to achieve this goal but is not sufficient.

Two deductions result from this:

(1) Contrary to what is normally stated, it is very plausible that nuclear deterrence, in practice, is effective *without* the presence of nuclear capabilities. The opponent *believes* that there are nuclear weapons pointed at him while, in reality, this is not the case. One could speak of 'weaponless deterrence'.²¹ For instance, some experts claim that despite the official doctrine, most or even all of the American nuclear weapons have been withdrawn from Europe.²²

However, this brings about anything but a stable situation as the opponent may very well get convinced of the opposite later on.

(2) The opposite reasoning is much more relevant. It does not suffice to have the necessary capabilities – read relatively invulnerable nuclear weapons and robust command and control systems. These capabilities have to be *perceived* by the opponents as credible. The less credible the threat is perceived, the greater the possibility of risk-taking and the failure of nuclear deterrence.

The credibility of the declared nuclear strategy depends, among other things, on the nature of the attack which has to be deterred. It is, for instance, clear that nuclear deterrence against the use of nuclear weapons is *more credible* than nuclear deterrence against a limited conventional attack.

Three scenarios have to be distinguished:

1.2.3.1 Nuclear Deterrence against an Attack with Conventional Weapons

There is no denying that 'rational' individuals are not eager to launch an attack with conventional weapons against a nuclear weapon state out of fear of a nuclear counterattack. Even today, the Nuclear Weapon States legitimize their nuclear weapons to deter an attack with conventional weapons.

However, risk-takers might not be deterred from launching a limited conventional attack. Then, the risk of escalation to the nuclear level looms.

The Risk of Escalation A limited 'conventional' war might get out of hand. Three such potential examples can for instance be detected during the 1962 Cuba crisis where both parties possessed nuclear weapons. A nuclear disaster was barely avoided:²³

(1) At the beginning of the crisis the Strategic Air Command (SAC) on Vandenberg Airforce Base loaded nine out of ten test missiles with nuclear arms and fired the tenth above the South Pacific as planned. It occurred to nobody that the Russians might interpret this differently.²⁴

(2) Friday morning, 26 October 1962, the Americans ran out of patience since they feared that the missiles in Cuba were becoming operational. At noon during this 'black Saturday' a U-2 was shot down over Cuba. Then President Kennedy said:

It isn't the first step that concerns me . . . but both sides escalating to the fourth and fifth step – and we don't go to the sixth because there is no one around to do so. We must remind ourselves that we are embarking on a very hazardous course.²⁵

(3) That same afternoon a message came in that another U-2 had navigation problems and was circling above the

Kola peninsula. The US feared that the Soviets might interpret this as a reconnaissance mission to prepare a nuclear attack by the US. McNamara then feared: 'This means war with the USSR.'

During the crisis Khrushchev wrote a letter to Kennedy with the following warning:

If people do not show wisdom, then in the final analysis they will come to a clash, like blind moles, and then reciprocal extermination will begin . . . we and you ought not to pull on the ends of the rope in which you have tied the knot of war, because the more the two of us pull, the tighter that knot will be tied. And a moment may come when that knot will be tied so tight that even he who tied it will not have the strength to untie it, and then it will be necessary to cut it, and what that means is not for me to explain to you, because you yourself understand perfectly of what terrible forces our countries dispose.²⁶

Advocates of nuclear deterrence, on the other hand, have since used the Cuba crisis to show that crises do not necessarily escalate.²⁷

To conclude, there is no escape to the risk of escalation. Scott Sagan (Stanford University) puts it this way: 'How confident can anyone be that states will always be deterred from conventional war simply because nuclear weapons use is possible? And how confident can anyone be that escalation will not occur despite hopes to the contrary?'²⁸ What if the UK, for instance, had not succeeded in ousting the Argentinians with conventional weapons during the Falklands War?

Risk-takers Several factors play a role in the mind of the risk-taker: (1) the declared strategy with regard to the size of the attack; (2) whether or not the risk-taker has nuclear weapons; (3) who owns the nuclear weapons?

In the first of these, the declared nuclear strategy with regard to the size of the attack with conventional weapons, three scenarios can – in theory – be distinguished:

(a) 'A small conventional attack will be answered with nuclear weapons.' The advantage of this strategy is that it

is very clear and hence minimizes uncertainty. On the other hand, it is not at all credible. After all, the principle of proportionality plays a role. In 1954 Liddell Hart rightly wondered: 'Would any responsible government, when it came to the point, dare to *use* the H-bombs as an answer to local and limited aggression?'²⁹

An example of such a nuclear strategy is the Massive Retaliation Doctrine of the 1950s, which corresponded with the idea that if the Soviets were to put one foot across the East-West frontier a massive American nuclear attack would be the response. This was part of simple bluffing or 'brinkmanship' by the twosome Eisenhower-Dulles.

Risk-takers will be attracted to this strategy. 'Do the test,' however, equals nuclear war (at least if the 'real' strategy corresponds to the declared strategy).

(b) 'A small conventional attack will not be answered by nuclear weapons.' 'What is small?' Diminishing the uncertainty, this still bears enormous risks. It undermines the overall stability. It might stimulate the opponent – especially a risk-taker – to attack, and the resulting conventional attack might get out of hand. In practice no example of this kind of strategy can be found.

(c) Most nuclear strategies therefore are not very clear. They just state that a conventional attack *might* be answered with nuclear weapons. This corresponds with the so-called concept of deterrence by punishment/retaliation. The American nuclear strategy of 'assured destruction' of the sixties corresponds to this concept. A situation of Mutual Assured Destruction was established.

The final result is uncertainty and ambiguity by which the proponents of nuclear deterrence feel secure and the opponents feel insecure.

Risk-takers might be deterred, but they might also exploit this ambiguity. Even advocates of nuclear deterrence have tried to play down the level of uncertainty. What kind of changes had been foreseen? A new line of thinking in nuclear strategy came about in the fifties but was only implemented in the seventies. The intention was to convince the opponent that he could not win and therefore had better not take the risk of attacking. First, one raised the nuclear threshold by raising the level of conflict at which

nuclear weapons are likely to be used. In other words, nuclear weapons would not be used immediately. This meant the end of Massive Retaliation and would make the strategy more credible.

Secondly, one convinced the other that nuclear weapons could also be used in a limited way. Limited nuclear wars would become possible, as opposed to the common (and hitherto used) concept of nuclear deterrence by which (strategic) nuclear weapons would have been used on a massive scale. Thomas Schelling stressed the importance 'to appear irrational'. This new strategy had been labelled 'deterrence by denial' (contrary to the common concept of 'deterrence by punishment/retaliation'). In 1959 Kaplan, for instance, introduced the concepts of 'intra-war deterrence' and 'escalation-dominance'. He believed that the problem of escalation could be overcome.

This strategy became the official American doctrine during the Carter administration, albeit already 'de facto' in place from 1974. Offensive concepts like 'countervailing', 'essential equivalence' and even 'prevailing' had been introduced during the Reagan administration.³⁰

Due to 'deterrence by denial', the number of (military rather than civilian) targets skyrocketed: counter-force instead of counter-value. This stimulated the arms race even more. In addition, the command and control installations were targeted, with negative implications for overall stability. The risk for a first-strike became larger.

In the end, the use of nuclear weapons paradoxically became *more* likely than before because of the enhanced risk for an outbreak of conventional war (as risk-takers did not fear a nuclear response immediately) and because of the (possible) escalation to the nuclear level.

Last but not least, tactical or sub-strategic nuclear weapons have a destabilizing effect as military commanders in the field might have to decide to use or lose them.

The majority of experts therefore believe that deterrence by punishment is more stable and credible than deterrence by denial.³¹ In 1974 even Kissinger stated: 'What in the name of God is strategic superiority? What is the significance of it, politically, militarily, operationally, at these level of numbers? What do you do with it?'³²

The whole debate among nuclear strategists during the Cold War witnesses the inherent paradox of nuclear deterrence. Even the advocates did not succeed in making it more credible. What remains are nuclear doctrines (especially after the end of the Cold War) with a level of uncertainty that leaves enough room for advocates of nuclear deterrence to be assured, for risk-takers to follow their nature, and for opponents to criticize these nuclear doctrines because they lack credibility.

The second factor influencing the game of risk-taking is whether the risk-taker has nuclear weapons as well.

If both parties have nuclear weapons the situation becomes even more complex and to a certain degree more dangerous. After all, a 'risk-taker' with nuclear capabilities might launch an attack with conventional weapons, knowing very well that a nuclear answer by the attacked will be met with nuclear weapons. The latter might restrain the introduction of nuclear weapons in the battle and favour the risk-taker. The risks for the party that attacks a nuclear weapon state with conventional weapons are thus reduced if both parties have nuclear weapons. In other words, nuclear deterrence in response to a 'conventional' attack carried out by a state possessing nuclear weapons is less credible than nuclear deterrence in response to an attack with conventional weapons carried out by a state that does not possess nuclear weapons.

The third variable influencing the outcome is: who owns the nuclear weapons. Matters become more complicated if one of the parties does not have its own nuclear weapons but is protected by a so-called nuclear umbrella of a nuclear weapon state.

Whether or not a nuclear umbrella is credible (and is perceived as credible by the opponent) depends, among other things, on whether vital interests of the provider of the nuclear umbrella are endangered by the attack or not. If the risk-taker also possesses nuclear weapons and is capable of hitting these vital interests, then this form of extended nuclear deterrence is not very credible, and will certainly be perceived as such by possible risk-takers.

This scenario corresponds with the situation in Western Europe during the Cold War. From the fifties onwards

American nuclear weapons were stationed in Western Europe to prevent a Soviet attack. After 1957 the former Soviet Union was capable of attacking American cities with ICBMs. The American nuclear umbrella consequently became far less credible. Would the American President be willing to launch American nuclear weapons if the Soviet Union attacked Western Europe with conventional weapons, very well knowing that the United States could expect a nuclear counterattack? In 1979 Henry Kissinger admitted that the Western European allies had to stop asking for strategic guarantees:

We must face the fact that it is absurd to base the strategy of the West on the credibility of the threat of mutual suicide. Therefore, I would say – which I might not say in office – the European allies should not keep asking us to multiply strategic assurances that we cannot possibly mean or, if we do mean, we should not want to execute, because if we execute we risk the destruction of civilization.³³

If our analysis is correct, we can only conclude that the Soviets did not like risk-taking (which is unlikely) or that they were simply not interested in offensive actions against Western Europe (which is more likely). This again shows the relativity of nuclear deterrence in having kept away World War III.

Our conclusion from the foregoing is that nuclear deterrence against an attack with conventional weapons may be effective. However, advocates of nuclear deterrence often fail to mention that it could easily fail as well. This is why as early as 1983 Soviet physicist and Nobel Prize Winner Andrei Sacharov emphatically rejected nuclear deterrence as an option against an attack with conventional weapons.³⁴

The odds of failing are highest when the risk-taker who also possesses nuclear weapons carries out a small conventional attack against a state that can only rely on the atomic umbrella of another state. Examples of failures are the already mentioned Argentinian attack against the Falklands in 1982, and the Syrian-Egyptian and Iraqi attacks against Israel in 1973 and 1991 respectively.

1.2.3.2 Nuclear Deterrence against an attack with Chemical and Biological Weapons (CBW)

The use of chemical and biological weapons (CBW) is prohibited by treaty. Already in 1991, for instance, the United States unilaterally declared it would never use CBW. Despite these treaties, the number of states acquiring CBW grows. Therefore, the current nuclear doctrines of the Nuclear Weapon States are also aimed at deterring attacks by chemical or biological weapons. But just as in the case of conventional weapons, these nuclear doctrines are not (very) credible because of the inherent difference in destructive capacity between CBW and nuclear weapons. Again, this brings up the problem of proportionality.

What if Saddam Hussein during the Gulf War had used chemical weapons (against which protection is possible), whether on a massive scale or not, against the Allied ground forces? The United States would have faced the following dilemma: launching a nuclear counterattack (smashing to pieces the existing nuclear taboo) or a non-nuclear counterattack undermining future nuclear deterrence threats against chemical weapons.

Advocates of nuclear deterrence argue that nuclear deterrence during the Gulf War was effective.³⁵ They refer to the fact that Iraq did not use chemical weapons. Nobody knows why this was so, but the reality is that Iraq risked attacking Israel with Scud missiles (with conventional warheads). Nuclear deterrence simply did not work in this case. On the other hand, it is possible to postulate reasons why Iraq did not use chemical weapons. Iraq might have lacked the technology to effectively launch such weapons³⁶, or chemical weapons might simply have been perceived by Iraq as not being the most effective weapons during the conflict, as chief UN arms inspector Rolf Ekeus insinuated. Even US Secretary of Defense William Perry hesitates: 'It is an interesting consideration as to why they did not use [chemical weapons] during the war, whether our counterproliferation worked, namely the very great conventional force we had simply overwhelmed them, or whether they feared a response from nuclear weapons.'³⁷

In any case it appears that the United States would have renounced the use of nuclear weapons, even if Iraq had

used them.³⁸ This would have rendered the existing nuclear deterrence doctrine even more incredible in the future. To conclude, it would be wise to make a clear distinction between nuclear weapons on the one hand and CBW (and conventional weapons) on the other, and to limit nuclear deterrence to attacks with *nuclear* weapons.³⁹

1.2.3.3 Nuclear Deterrence against an Attack with Nuclear Weapons
Nuclear deterrence has the most credible effect *vis-à-vis* a possible *nuclear* attack.⁴⁰ Advocates of nuclear deterrence claim that the result is a 'stable balance of terror'. The Pentagon, for instance, still seems to justify the nuclear arsenal of the US because of the risk of a global nuclear conflict. 'The risk of global conflict today is greatly reduced compared to the time of the Cold War, but as long as nuclear weapons still exist, some risk of global conflict remains. The US should, *therefore*, retain a small but highly effective nuclear force as a deterrent,'⁴¹ Defense Minister Perry explains. The French Defence White paper of 1994 also stated that nuclear deterrence should be maintained, among other things because of the possibility of a new important threat comparable to the former USSR.⁴²

However, there remain two immense risks with regard to nuclear deterrence versus a nuclear attack: (1) the risk of escalation; (2) the risk of a first strike.

First, the risk of escalation always exists, from the conventional level to the nuclear level (see above) and from a limited nuclear war to a large-scale nuclear war. Risk-takers might miscalculate. The consequences of miscalculation with nuclear weapons are considerable.

Second is the risk of a first strike. If one of the actors does not possess enough (invulnerable) nuclear weapons, the other might be tempted to make a surprise attack and eliminate the nuclear weapons capability of the former with a so-called first strike. Therefore, for stability's sake Nuclear Weapon States should provide for a credible *second-strike capability*, which is a capability of launching a nuclear counter-attack with sufficient destructive capacity, when the opponent has been the first to use nuclear weapons.

Two scenarios should be distinguished: preventive and pre-emptive strikes.

Preventive strikes A particular destabilizing situation arises when one of the parties is still in the process of developing a nuclear arsenal and hence does not yet possess a second-strike capability. Risk-takers might then be inclined to launch a *preventive* nuclear attack against the emerging nuclear weapons programme. During the period of American nuclear monopoly (1945–9) and even after that time the American military more than once favoured preventive bombing of the Soviet nuclear programme.

Scott Sagan believes that the *military* are more inclined than politicians to attack preventively. He gives the example of a classified report of the American Military Staff of September 1945 calling for a preventive attack on the Soviet nuclear programme.⁴³ In February 1947 the American Air Force stated: 'It would be feasible to risk an all-out atomic attack at the beginning of a war in an effort to stun the enemy into submission.'⁴⁴ General Anderson, who publicly favoured such attacks still in 1950 (despite the official doctrine excluding them), was dismissed by Truman for his comments. During the Cuba crisis also it was American generals who twice pleaded for a preventive attack against the installed missiles in Cuba. They estimated a 90 per cent success rate for the mission.⁴⁵

Pre-emptive strikes Yet, it is not sufficient to have a secure second-strike capability. What it all comes down to is whether the opponent *perceives* and believes that there exists such a capability. Since opponents, by definition, distrust one another, they continuously suspect each other of developing new weapon systems enabling them to launch a first strike. Despite the acquisition of a secure second-strike capability one continuously lives in fear of a first strike. Thomas Schelling calls this 'the reciprocal fear of a surprise attack' and speaks about 'cycles of "He thinks we think he thinks we think . . . he thinks we think he'll attack; so he thinks we shall; so he will; so we must"'.⁴⁶

The fear of a first strike may lead to a very destabilizing situation, especially during a crisis. The party fearing a first strike the most may contemplate launching a so-called *pre-emptive* attack, which is a nuclear attack intended to be ahead of the opponent's expected first strike.

Two scenarios of pre-emptive strikes can be distinguished: (1) directly, by eliminating all nuclear weapons of the opponent, or (2) indirectly, by destroying the nuclear command and control systems of the opponent.

A first goal might consist of trying to eliminate all the opponent's nuclear weapons at once. This is extremely risky. But it is common knowledge that individuals who are near despair often overestimate their capabilities and are willing to take excessive risks.⁴⁷ Glenn Snyder is distinct: 'It is very hard to believe that any country would deliberately accept the *certainty* of severe retaliatory damage in preference to the *uncertain* prospect of being the recipient of a first strike.'⁴⁸

Kenneth Waltz, on the other hand, does not believe in pre-emptive attacks because one can never know for sure that all the opponent's nuclear weapons will be destroyed in one single blow. He therefore characterizes this Cold War reasoning as 'decades of fuzzy thinking'.⁴⁹

Waltz, undoubtedly, is right in saying that it is not easy to destroy an opponent's nuclear arsenal in one single blow. The main counter-argument is that this is too radical an approach. After all, it only takes one party to *believe* that this possibility exists.⁵⁰ It would not be the first time that a party miscalculated, especially during a crisis situation.

After the Cold War it became clear from statements made by Gordievsky and others that the former Soviet Union in fact feared an American first strike, for instance, in the period between 1981 and 1983; more specifically after the Russians shot down the KAL 007 in September 1983 and during NATO exercise Abel Archer in December 1983 when procedures for firing nuclear weapons were being used.⁵¹ The risk of an unwanted nuclear war faced by the international community during the Cold War was greater than is generally assumed.

Second, there is the danger of the command and control systems being destroyed by the opponent's nuclear pre-emptive strike, as these systems are very sensitive to the electronic pulses resulting from a nuclear explosion. And as Blair states: 'If command and control fail, nothing else matters.'⁵²

The solutions worked out for anticipating pre-emptive strikes – delegation of decisions and higher alert-rates – paradoxically increase instability.

We have already mentioned above the increased risk of irrational use of nuclear weapons in the case of decentralized decision-making. High alert-rates increase the chance of unauthorized use. Decisions have to be taken in a very short period of time. Higher alert-rates, among other things, may include a launch-on-warning doctrine. This doctrine implies that nuclear weapons will be launched as soon as the enemy have fired their missiles but before these missiles hit the ground. The American and former Soviet doctrines during the Cold War relied most of the time on such launch-on-warning strategies. This creates an immensely unstable situation as the decision-makers will have only a few minutes to reach their decision.

The big danger exists that a particular situation will be wrongly assessed and that launching nuclear weapons will unintentionally precipitate a nuclear war. Early warning systems are a primary condition to delegation of decision-making and to higher alert-rates (again increasing the importance of command and control systems), but they prolong the reaction time and therefore also hinder the delegation of decisions and higher alert-rates.⁵³

To conclude, the direct risks of a preventive or pre-emptive first strike are real and should not be underestimated.

Nuclear arms race As one can never be sure how many and which nuclear weapons the opponent possesses, the risk that the opponent gains a quantitative advantage so that he might consider a first strike, leads to a massive arms race. This results in its turn in an increased degree of distrust and instability.

An arms race is an excellent example of the so-called security dilemma.⁵⁴ For security reasons one purchases weapons, hence increasing the opponent's subjective sense of insecurity (since weapons can always be perceived as offensive) and thus inciting the latter to arm himself even more. The result is that the original objective – to enhance one's own security – is not achieved. On the contrary, it is weakened. Even advocates of nuclear deterrence admit that nuclear weapons may exacerbate the security dilemma.⁵⁵

During the Cold War a total of 130 000 nuclear warheads were produced, which comes down to seven nuclear

warheads a day. Future nuclear weapon states among which serious tensions exist, are bound to head the same way.

What is a Sufficient Destructive Capacity? A second strike – as mentioned above – requires a great enough number of nuclear weapons with a sufficient destructive capacity. During the Cold War in the framework of the concept of ‘Assured Destruction’ a very high destruction level had been established by Secretary of Defense Robert McNamara. The United States was capable of terminating 20–25 per cent of the Soviet population and 50–60 per cent of the industrial complex of the former Soviet Union *after* a Soviet first strike. This required at least 400 one megaton nuclear weapons as a US second-strike force (on the first day of the conflict). In other words, after a Soviet first strike the United States had to be able to keep enough nuclear weapons intact for a nuclear attack with an equivalent explosive power of 400 mt.

McGeorge Bundy, National Security Advisor under President Kennedy, criticized his own policy later on by stating:

There is an enormous gulf between what political leaders think about nuclear weapons and what is assumed strategic warfare. Think-tank analysts can set levels of ‘acceptable’ damage well up in the tens of millions of lives. They can assume that the loss of dozens of great cities is somehow a real choice for sane man. They are in a unreal world. In the real world of political leaders – whether here or in the Soviet Union – a decision that would bring even one hydrogen bomb on one city of one’s own country would be recognized in advance as a catastrophic blunder; ten bombs on ten cities would be a disaster beyond history; and a hundred bombs on a hundred cities are unthinkable.⁵⁶

Waltz agrees that one invulnerable hydrogen bomb suffices as a means of deterrence.⁵⁷ More and more advocates of nuclear deterrence state that a few dozen nuclear weapons are sufficient as a deterrence force,⁵⁸ and therefore indirectly criticize the enormous build-up of nuclear weapons during the Cold War. Neither the US nor the former Soviet Union stuck to the limited numbers of nuclear weapons necessary for the ‘Mutual Assured Destruction’ (MAD) doctrine.

It is clear that nuclear weapons installed on submarines, aircraft, on mobile missile launchers or in reinforced silos are less vulnerable than missiles stationed in ordinary silos. Not one of the Iraqi mobile Scud missiles was destroyed during the Gulf War, despite 2700 Allied sorties (15 per cent of all strategic bombing raids).⁵⁹ Completely invulnerable systems, however, are still to be invented.

A few missiles – a few dozen at most – thus suffice for a credible second strike. In 1992 McNamara pleaded for an arsenal of 60 nuclear weapons on both sides. From 1998 the UK will be nearest to this situation of ‘finite deterrence’.⁶⁰ It will have a total of only 384 nuclear weapons stationed on four Trident submarines.

Vulnerability is also decreased by higher alert-rates. Conversely, higher alert-rates increase, as already mentioned, the possibility of unauthorized use.

To conclude this section, nuclear deterrence undoubtedly has more chance of succeeding in the case of deterring *nuclear* weapons. Nevertheless huge risks are also involved in this nuclear strategy. Fear of a first strike and the risk of escalation are inherent to nuclear deterrence.

1.2.3.4 A Credible Nuclear Strategy: Summary

Nuclear deterrence can work in practice. But what the advocates of nuclear deterrence often fail to mention is that it can also fail. Risk-takers may test the paradox of nuclear deterrence in extremes. The credibility of the nuclear doctrine is of importance here. Nuclear deterrence to prevent a conventional or CBW attack is much less credible than nuclear deterrence *vis-à-vis* nuclear weapons.

After his days in office, Robert McNamara, Secretary of Defense under Kennedy and Johnson, acknowledged having always advised *against* the use of nuclear weapons.⁶¹ ‘Nuclear weapons serve no military purpose whatsoever. They are totally useless – except only to deter one’s opponent from using them.’⁶² Risk-takers reading these postulates, however, will be more inclined to risk attacking.

Also in the scenario of nuclear deterrence *vis-à-vis* nuclear weapons, there exists a chance that nuclear deterrence will fail. In 1964 General Thomas Power already summarized: ‘The point is that what will deter us will not necessarily

deter the Soviets, and what will make them accept risks will not make us accept similar risks.⁶³ One cannot go round the fear of a first strike. Distrust is inherent to nuclear opponents. Last but not least, a conventional war might escalate to the nuclear level or the limited use of nuclear weapons might escalate to a large-scale nuclear war.

1.2.4 Conclusion

Nuclear deterrence has a world of difficulty to be taken seriously. It does not work in theory. But nuclear deterrence in most cases will 'work'. The other side of the coin (not shown most of the time) is that nuclear deterrence, in practice, may also fail. It is sufficient that one of the three basic conditions is not fulfilled to make discussing the efficiency of nuclear deterrence a pointless exercise. Sagan rightly noticed: you can believe that nuclear deterrence will always work, but this remains in the end a belief.⁶⁴

The three conditions partly overlap. The concept of vital interests is by definition vague which leaves place for uncertainty. This uncertainty might make risk-takers believe that the declared nuclear strategy is not very credible. They might dare to attack the deterrer, for instance, with a (small) conventional attack or with a (nuclear) first strike.

The use of nuclear weapons was surely contemplated during the Cold War.⁶⁵ It is a myth to believe that nuclear weapons will never be used as the result of a well-contemplated decision. Vietnam and Bosnia demonstrate that political leaders in both the East and West, in both democratic and non-democratic states have no insurmountable moral problem with the deaths of tens of thousands of innocent victims. After Hiroshima and Nagasaki President Truman supposedly said: 'When you have to deal with a beast you have to treat him as a beast.'⁶⁶ Will Nagasaki be the last one? Even Fred Iklé doubts it:

Whether by accident, because of a terrorist act, or as part of a military campaign, a nuclear bomb might explode someday, unleashing forces that would transform the international system far more profoundly than did the collapse of the Soviet empire.⁶⁷

What are the Implications of Nuclear Deterrence Failing? The failure of nuclear deterrence would mean putting before the nuclear weapon states the horrifying choice of whether or not to use nuclear weapons. The latter means the death of tens of thousands, maybe even hundreds of thousands of people in the case of thermonuclear weapons. Other nuclear weapon states might get involved and the conflict might escalate to a large-scale nuclear war.

Kenneth Waltz, on the other hand, thinks that the possibility of escalation to a large-scale nuclear war is small: 'Should deterrence fail, a few judiciously delivered warheads are likely to produce sobriety in the leaders of all the countries involved and thus bring rapid de-escalation.'⁶⁸ Not many people share this 'optimistic' thinking.

The (renewed) use of nuclear weapons, in any case, would mean the end of the nuclear taboo, further increasing the possibility of the use of nuclear weapons in the future (with a higher risk of a large-scale nuclear conflict in the long term). The alternative – not to react with nuclear weapons (despite the declared nuclear strategy) – comes down to undermining nuclear deterrence . . .

1.3 NUCLEAR DETERRENCE AND NUCLEAR PROLIFERATION

Since opponents can never be sure that nuclear weapons are strictly for defensive purposes the acquisition of such weapons by one state may lead to an identical action by the other state.

Waltz is right when he states that a small nuclear arsenal is as credible as a massive amount of nuclear weapons. In other words, a nuclear arsenal and a credible second-strike capability, more specifically, do not require large numbers of nuclear weapons. Proliferators just have to succeed in producing a few nuclear weapons to be considered as players of the nuclear deterrence game.

The threat of nuclear proliferation will be elaborated in Chapter 2.

1.4 NUCLEAR DETERRENCE: THE RISK OF ACCIDENTS AND UNAUTHORIZED USE

Separable from the *theory* on nuclear deterrence there are inherent risks linked to the *possession* of nuclear weapons (or the practice of nuclear deterrence), among which is the possibility of accidents.

During the Cold War not one serious accident with nuclear weapons occurred (as far as we know). However, from documents which surfaced at the end of the Cold War, it seems that there have been far more accidents than previously thought and that we were closer to a nuclear confrontation as a result of this.⁶⁹

On 2 June 1980 the computers in the SAC headquarters reported a massive nuclear attack by the Soviets. As a result B-52 bombers taxied to the runway and the hatches of the ICBM were opened. The alarm was only cancelled after 3.5 minutes. In the end a flaw in a microchip of NORAD was discovered. A false alarm – surely if linked to launch-on-warning strategies – could accidentally have led to launching nuclear weapons.

Much earlier, during the Cuba crisis in October 1962 the international community stood nearer than at any other time to nuclear disaster. It is less known that during the highlight of the crisis several accidents occurred which could easily have escalated as Scott Sagan shows:

(1) On Wednesday 24 October 1962 DEFCON II had been activated for the first and last time in nuclear history. The latter means that the American Command had been put on the highest state of readiness involving American nuclear weapons worldwide. On Thursday night 25 October 1962 a guard at an Airforce base in Minnesota saw someone climbing over the fence. He fired and activated the sabotage alarm. At military bases in Wisconsin, however, the wrong alarm had been activated, namely the alarm signalling a nuclear war. The pilots, who had always been instructed that during crisis situations there were never exercises, ran to their aircraft. After a final check in Minnesota these aircraft were prevented from taking off at the very last moment. Ironically the incident was caused by a bear.⁷⁰

(2) In the same week, Saturday 27 October 1962 – in the

midst of the crisis – a missile with nuclear warheads, directed from Cuba to Florida, appeared on the NORAD radar screens. Only after the missile should have reached Florida was it discovered that the screens had shown a test-tape. The incident occurred as a result of the following circumstances. At the time, a satellite was passing over the place where the missile attack was expected, a problem which had been anticipated by installing several radars, but these had not been activated. Besides, warnings are usually issued for passing satellites but this apparatus had been specially shut down during the crisis, ironically to prevent such events.⁷¹

Advocates of nuclear deterrence will point at the positive outcome of the Cuba crisis. But who can guarantee that there will never occur a ‘serious’ accident with nuclear weapons? Accidents are inherent to complex systems, certainly if controlled by bureaucratic organizations.

There is no doubt that the security measures are becoming more advanced. Environmental Sensing Devices, for instance, are systems whereby the nuclear warhead explodes only when it finds itself in a certain situation. This could prevent a nuclear explosion if an aircraft carrying nuclear weapons were to crash, for instance. Besides that, electronic codes (Permissive Action Links or PALs) are required to make an explosion possible.

Others point out that too many security measures could bring about the opposite effect as a result of the increased complexity. Scott Sagan concludes:

Finally, if my theories are right, the US defense department should be telling new nuclear states, loudly and often, that there are inherent limits to nuclear weapons safety. If my theories are right, however, the US defense department will not do this, because this would require it to acknowledge to others, and itself, how dangerous our own nuclear history has been.⁷²

1.5 NUCLEAR DETERRENCE: A MINIMALIST APPROACH

Nuclear deterrence is also problematic because it is a very minimalist method of preventing war. Nuclear deterrence

can at most freeze conflicts. The 'Cold' War again is the best example.

Advocates of nuclear deterrence will retort that nuclear deterrence is better than going to war. The counter-argument goes that there might be other – far less dangerous – means to obtain the same result, like for instance non-nuclear confidence and security building measures (CSBMs) or the creation of security communities.⁷³ In that way tensions and conflicts are solved in a non-violent manner, also in the long term.

Nuclear deterrence just makes it more difficult to achieve constructive steps with regard to conflict management. After all, nuclear deterrence increases the already existing distrust between the conflicting parties. In 1987 even Henry Kissinger argued that: 'It is not possible indefinitely to tell democratic republics that their security depends on the mass extermination of civilians'. This would lead to 'the demoralization of the West,' he predicted.⁷⁴

1.6 NUCLEAR DETERRENCE: CONCLUSION

Both advocates and opponents of nuclear deterrence agree that it does not work in theory. The inherent nature of people and organizations does not guarantee that all the conditions with regard to nuclear deterrence will always be fulfilled.

Advocates say that despite the theory, the fear of a nuclear counterattack will always prevail. Nuclear deterrence will always work *in practice*. They speak of 'existential deterrence'.⁷⁵ Lawrence Freedman puts it this way: 'The Emperor Deterrence may have no clothes, but he is still Emperor.'⁷⁶

Supporters also refer routinely to the past 50 years. Some even go on to say that stability during the Cold War was almost exclusively due to reciprocal nuclear deterrence, thus preventing a third world war.⁷⁷ Others only state that nuclear weapons have played one role (among others) in bringing about stability.⁷⁸

In this way the latter poach on the territory of the moderate opponents of nuclear deterrence who point at other factors that have played an important role in preserving

the 'long peace': the massive conventional deterrence effect of both alliances, which comes down to a general fear of war reinforced by the horrifying memories of World War II;⁷⁹ the rising standard of living; the fact that neither the US nor the Soviet Union have ever had the *intention* of attacking each other's vital interests; and that Stalin was more interested in domestic than foreign politics. Even Robert Jervis stated before the end of the Cold War: 'Nuclear weapons by themselves – and even a mutual second-strike capability – might *not* be sufficient to produce peace.'⁸⁰ The opponents also put forward that during the 'stable' Cold War more than 20 million people lost their lives in wars. Stability and peace apparently are not absolute terms.

Some opponents go as far as to say that nuclear weapons are 'irrelevant' and nuclear deterrence cannot work at all.⁸¹ Vasquez compares the advantage of nuclear deterrence with a small boy running with his hands up every day at 3.30 pm in Brooklyn supposedly 'to keep away the elephants'. This boy will most emphatically state that his behaviour is effective. . . .⁸²

It is a fact that one cannot ever know to what degree nuclear deterrence has contributed to stability during the Cold War. To state that the stability was due to nuclear weapons is premature to say the least.

The central question for the future is the following: how much longer will nuclear deterrence be accepted as a security strategy to prevent future violent conflicts? The answer requires a long-term vision, something most nuclear strategists lack, according to Joseph Nye.⁸³ Chapter 1 tried to demonstrate that the risks accompanying nuclear deterrence are extremely great. Just the possibility of an accident and the risk of escalation involved make it necessary to question nuclear deterrence. Since nuclear deterrence cannot work in theory, it may well go wrong in practice some time in the future. Nuclear deterrence may have a stabilizing effect in practice, but it is an illusion to believe that it will *always* work. Or as McNamara put it: 'it can be confidently predicted that the combination of human fallibility and nuclear arms will inevitably lead to nuclear destruction.'⁸⁴

Failure of nuclear deterrence equals (again) launching nuclear weapons or a further undermining of the nuclear

deterrence doctrine which, in turn, may lead to a greater chance of using them. Working on the assumption that nuclear weapons are supposed not to be used (because of their destructive capacity) we conclude that nuclear weapons need to be further delegitimized. Doctrines based upon nuclear deterrence should be gradually reduced, to disappear entirely in the future. The latter is one of the most important objectives of the Nuclear Non-Proliferation Treaty (NPT). The 1995 NPT Extension Conference is even clearer: 'the determined pursuit by the Nuclear Weapon States of systematic and progressive efforts to reduce nuclear weapons globally, with the ultimate goal of eliminating those weapons, . . .'.

Two factors on top of that make experts realize that the costs of nuclear deterrence in the long run are far higher than the benefits: (1) the end of the bipolar power system which has dominated the international system for more than 40 years, and (2) the proliferation of nuclear weapons in the post-Cold War era which is rightly described as one of the gravest potential threats to international peace and security. These two factors will be further analysed in Chapter II. We will also scrutinize the current nuclear strategies based on the higher developed concept of nuclear deterrence.

2 Nuclear Deterrence and Nuclear Proliferation in the Post-Cold War Period

INTRODUCTION

The end of the Cold War brought with it a totally different geostrategic situation. From the point of view of Western Europe, the fall of the Berlin Wall and the implosion of the USSR put an end to the direct threat from the East. The present Russia is anything but stable, but the risk of a Russian attack has become very small. Moreover, Russia and NATO have formed a strategic partnership (with a permanent council) since May 1997. In Bosnia Russia supplied troops to IFOR, led by an American general.

The disappearance of the external threat for the West also brought along less positive aspects: an increasing tendency towards isolationism, especially in the US, although the idea of a 'European' pillar within NATO might also be an indication in this respect; an increasing number of nationalist and ethnic conflicts; and greater uncertainty and insecurity regarding the future security situation. Besides, these risks are no longer defined in only military terms. Overpopulation, environmental pollution, underdevelopment, AIDS, migration and religious fundamentalism only now receive the attention they deserve. The proliferation of weapons of mass destruction – particularly nuclear weapons – and their delivery systems are in this context usually mentioned as well. In Chapter 2 we will focus on this particular threat to international peace and security.

2.1 NUCLEAR RISKS IN THE POST-COLD WAR PERIOD

At the present time, we are told that the nuclear *danger* has been replaced by a series of nuclear *risks*. The general

risks involved with nuclear deterrence however still remain – in spite of the end of the Cold War and the perception of the general public that the dangers accompanying nuclear weapons are now over. The enormous nuclear arsenals are gradually being reduced, but changes in the nuclear doctrines remain very limited. Nuclear deterrence is still not being questioned. Most attention should be paid to the *spread* of nuclear weapons because, potentially, this holds the most risks.

2.1.1 Nuclear Proliferation

The term nuclear proliferation here corresponds with the concept of ‘horizontal (nuclear) proliferation’. *Horizontal* proliferation is the spread of nuclear weapons to more and more states while *vertical* proliferation corresponds with more and more nuclear weapons within one state.

Besides the Nuclear Weapon States, only Israel, India and Pakistan possess nuclear weapons or at least have the capability to produce nuclear weapons in the short term. Israel is said to have more than 100 nuclear weapons; India and Pakistan have the capability to produce (dozens of) nuclear weapons in a very short period of time. These three threshold countries are also the most important outsiders of the NPT.

We assume that besides those eight nuclear weapon states, no proliferator has succeeded in producing nuclear weapons (and which are still in his possession). South Africa has admitted that it once produced six nuclear weapons; however, they have since been destroyed. Argentina and Brazil decided to give up their nuclear weapons programmes in 1990.

Iraq and North Korea have – notwithstanding Article II of the NPT (which both have ratified) – tried to produce nuclear weapons. In 1991, Iraq, with only a few years to go to produce a first nuclear weapon, was bombed preventively during the Gulf War and afterwards submitted to UN controls.

North Korea in 1994 agreed to IAEA controls in exchange for economic support in the form of new nuclear power stations.

In the short term, it seems that no rogue or revisionist state is able to produce both nuclear weapons and ballistic missiles.¹ The illegal transport of *complete* weapon systems on the other hand becomes one of the nightmare scenarios. Nearly 20 000 tactical nuclear weapons are left in Russia. Each of them is a potential target for proliferators. Parallel with the economic disarray, security measures with regard to guarding these tactical nuclear weapon systems are softening. The 'loose nukes' scenario is not totally unrealistic. The same applies to a nuclear brain drain from Russia to proliferating countries.

Incentives always exist. Nuclear weapons are a kind of equalizer for smaller states.

If only one additional state should succeed in acquiring nuclear weapons, the proliferation-domino might start tumbling again.

Stabilizing Effect? Some academics – like Kenneth Waltz – claim that nuclear proliferation has a stabilizing effect and calls for a 'measured spread of nuclear weapons'.² The number of interstate wars will decrease as more states dispose of nuclear weapons. This reasoning is the logical continuation of the concept of nuclear deterrence and shows again – also according to MccGwire – the absurdity of that concept.³

The majority of observers, however, are convinced that the risks involved with nuclear deterrence will increase more than proportionally as the number of nuclear weapon states goes up.

First of all, the more states that possess nuclear weapons, the more nuclear weapons there will be (all other factors remaining the same), the more chance that nuclear deterrence will fail, and that accidents will occur. John Holum, Director of the US Arms Control and Disarmament Agency (ACDA), admits that: 'If these (nuclear) weapons get out of hand and they are spread as a preventive, the world becomes a much more dangerous place for everybody. The more weapons there are, the more likely . . . they will be used.'⁴

Specific Risks Secondly, five specific dangers relating to nuclear proliferation have to be mentioned:⁵

(1) The chance that a nuclear accident will happen is considerably greater in emerging nuclear weapon states than

in the existing Nuclear Weapon States. These proliferating states simply lack the necessary command, control, communication and computers (C4) systems. Moreover, smaller arsenals require greater alert-rates (because of the fear of a preventive attack), which again will increase the chances of accidents.⁶

Therefore, some experts plead for 'proliferation management' – security technology to prevent accidents offered by the Nuclear Weapon States. Critics on the other hand state that while in the short term this can give some solace, in this way nuclear weapons are again being legitimized.⁷

(2) The chance that nuclear weapons will fall into the hands of terrorists increases because proliferating states do not possess the required safety measures.

(3) The risk of a preventive attack against an emerging nuclear weapon state increases, because no state likes the idea that its neighbouring states are disposing of nuclear weapons (apart from the fact that it has nuclear weapons itself). This is an extremely destabilizing situation. Moreover, in 'rogue states' most of the time militaries are in charge of the nuclear weapons programmes and generals seem more inclined (than politicians) to preventive attacks.

The best example of a preventive attack is undoubtedly the Israeli attack on the Iraqi Osiraq reactor in 1981. The Gulf War has also been described as a preventive war.

(4) If two neighbouring states – for example Iran and Iraq – disposed of nuclear weapons in the future, this in itself would increase the danger, because of the geographical nearness and the related shorter reaction time in crisis situations. The fact that these states – in spite of their status as Non-Nuclear Weapon States – were disposing of nuclear weapons, would at that moment be an indication of their risk-taking behaviour. As both, in a first phase, only disposed of a restricted number of nuclear weapons, there is a clear chance that one of these risk-takers *would* execute a first strike.

Risk-takers are not willing to put the vital interests of their state at stake for whatever reason but they will be prepared sooner than others to risk a conventional, CBW attack or nuclear first strike if they have (or think they have) an interest in doing so.⁸ The former American Secretary

of Defense, William Perry, also states that '[rogue states] with nuclear weapons are likely to be harder to deter and more likely to coerce their neighbors or start a war in the first place'.⁹ What if Saddam Hussein, for example, had possessed nuclear weapons during the Gulf War? Would the international reaction have been the same? The Indian Minister of Defence drew the following remarkable conclusion from the Gulf War: 'Don't fight the United States unless you have nuclear weapons!'¹⁰

(5) Finally, there is quite a strong correlation between, on the one hand, states known as rogue states and, on the other hand, states struggling with Muslim fundamentalism. The dangers related to Muslim fundamentalists in charge of a state with nuclear weapons should not be underestimated. Because of a different set of values, they might be less reluctant to use nuclear weapons.

The conclusion from the foregoing points is that the spread of nuclear weapons is one of the – if not the – most important security risks for the future. The former American Secretary of State Warren Christopher called the spread of weapons of mass destruction 'the biggest potential threat for the US and its allies'.¹¹ Already on 31 January 1992, the UN Security Council stated that the spread of weapons of mass destruction is 'a threat to international peace and security'. In January 1994, NATO also recognized explicitly the danger of the spread of weapons of mass destruction; in this context two NATO study groups were established (politico-military and defence).

Even Waltz admits that proliferation might turn out wrong, but believes that in that case the consequences would be limited. 'If such states use nuclear weapons, the world will not end. The use of nuclear weapons by lesser powers would hardly trigger them elsewhere.'¹² Most observers, however, reject this analysis.

Which are the Potential Proliferators? At the present time, Iran, Iraq, Libya and North Korea are the most frequently mentioned proliferators.¹³ Syria and Algeria sometimes belong to that group. These countries are called 'rogue', 'crazy' or 'revisionist' states. Colin Gray defines the latter

as 'states whose general line in statecraft is intended radically to alter the terms of national security in its favor'.¹⁴

The Middle East and the Far East are the most sensitive regions in the world in this regard. It is obvious that religious fundamentalism in the Middle East combined with the proliferation of nuclear weapons can have enormous destabilizing consequences. Imagine the scenario of nuclear kamikaze – on which nuclear deterrence has no effect at all – becoming real . . .

On the other hand, regions such as Latin America, the Pacific and also Africa and South-East Asia are (or will become) nuclear weapon free zones. As such, the Southern Hemisphere is more or less free of nuclear weapons. Ukraine (the third largest nuclear weapon state after the implosion of the former Soviet Union) as well as Belarus and Kazakhstan have signed the NPT and have transported all remaining nuclear weapons to Russia.

It is crucial to understand that the longer the Nuclear Weapon States continue to hold on to nuclear deterrence, the more Non-Nuclear Weapon States will question the pros and cons regarding their non-nuclear status and their membership of the NPT. As a result, more and more states will be inclined to acquire nuclear weapons as well.

2.1.2 Nuclear Terrorism

The longer the Nuclear Weapon States hold on to nuclear weapons, the more likely it is that terrorists will succeed in getting control of nuclear weapons, either directly or indirectly. With the collapse of the former USSR, the chance increases that entire nuclear weapon systems will be stolen.

After the attack with chemical weapons in the underground of Tokyo in 1995, there are not many taboos left for terrorists. The use of nuclear weapons is one of them. Nuclear weapons do not have to be launched by means of sophisticated ballistic missiles to constitute a threat. A rudimentary atom bomb – like the one used on Hiroshima – thrown down from a plane or hidden in a truck, can have the same effect. Some experts consider nuclear terrorism as the largest nuclear risk.¹⁵

2.1.3 Accidents with Nuclear Weapons

The longer the Nuclear Weapon States hold on to nuclear deterrence, the more likely it is that a nuclear accident will happen. Nuclear proliferation increases this chance even further. The fact that until now the consequences of nuclear accidents were limited, does not give any guarantee for the future. Former SAC Commander Lee Butler, an experienced observer, is nowadays in favour of a world without nuclear weapons. One of his main arguments is the risk of accidents. Scott Sagan also predicts: 'In the long run . . . the likelihood of a serious nuclear weapons accident is extremely high.'¹⁶

2.2 ANSWERS TO THESE 'NEW' NUCLEAR RISKS

In order to deal with these nuclear risks, a variety of measures have been tried. Besides the traditional nonproliferation instruments, the Nuclear Weapon States stick to the concept of nuclear deterrence as a means to deter proliferators.

2.2.1 The Traditional Nuclear Nonproliferation Regime

By 'regime' we mean the whole of principles, standards, rules and procedures that are agreed upon voluntarily by states in a certain policy domain. The objective of the nuclear nonproliferation regime is, by definition, to discourage the spread of nuclear weapons.

2.2.1.1 Traditional Nonproliferation Instruments

Nonproliferation Treaty (NPT),¹⁷ as the cornerstone of the nonproliferation regime, is undoubtedly one of the most important recorded arms control treaties in history. The number of member countries increased from 142 in 1990 to 179 in 1995 and more than 190 states in 1997. Israel, India and Pakistan have not signed the treaty and have no intention of signing it in the immediate future.

The treaty, only a few pages long, contains three main objectives: (1) nonproliferation of nuclear weapons (arts. 1–3); (2) assistance for the development of (civil) nuclear energy (art. 4); (3) nuclear disarmament (art. 6).

First, the treaty prohibits the Nuclear Weapon States from delivering nuclear weapons or other nuclear explosives to any other country (art. 1) and prohibits the Non-Nuclear Weapon States from receiving or producing nuclear weapons or other nuclear explosives (art. 2). Controls, however, are not provided. The International Atomic Energy Agency (IAEA) only verifies that no fissile material (uranium and plutonium), or material that can be used to achieve fissile material, is transferred from the civil to the military programme (art. 3). It is remarkable that these controls only apply to the Non-Nuclear Weapon States.

Secondly, Article 4 states that all member countries of the NPT have the right to develop nuclear energy programmes and even encourages, in this context, cooperation between developed and developing states.

A third important aim of the NPT is nuclear disarmament. Article 6 states: 'Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to 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.' This juridical binding text is of course interpretable. It does not speak about the elimination of *all* nuclear weapons, but about 'nuclear disarmament' in general. Some observers maintain that the realization of an NFWF depends on the realization of a world without (conventional) weapons.¹⁸

Recall that Article VI of the NPT specifically places nuclear disarmament in a larger disarmament context – imposing this broader obligation on all states parties. It thus embodies the essential truth that nuclear disarmament cannot occur on demand or in a vacuum, but must be approached in tandem with broader improvements in the international security environment.¹⁹

Most observers however do not agree with this interpretation. The NPT entered into force in 1970. During five-yearly

review conferences, it is verified whether the commitments have been met (art. 8.3). In 1995, twenty-five years after the NPT became effective, the question of extension of the treaty had to be considered (art. 10.2).

The Review and Extension Conference of 1995 The main result of the 1995 NPT conference was undoubtedly the extension of the NPT for an indefinite period. Jayantha Dhanapala, the successful Sri Lankan chairman of the conference, secured the indefinite extension without a vote thanks to a compromise. A 'package deal' was worked out on the basis of a constructive proposal made at the beginning of the conference by South Africa. It contained three components: (1) the extension of the NPT for an indefinite period; (2) a document entitled 'Principles and Objectives for Nuclear Nonproliferation and Disarmament'; and (3) the reinforcement of the review mechanism of the NPT. During the conference, a proposal for an indefinite extension (presented by Canada) gained the necessary majority (without unanimity). As a result, the rest of the time was dedicated to the realization of the package-deal. It must be said that this majority was the result of intense lobbying by the Nuclear Weapon States months before the conference started.

It is true that only the decision to extend the treaty indefinitely is juridically binding, but the fact that in the preamble of this text one decision points to the other two makes these decisions politically binding, to say the least. Dhanapala therefore considers it as an indefinite but *conditional* extension.²⁰

Within the scope of the document 'Principles and Objectives for Nuclear Nonproliferation and Disarmament', an 'action programme' for nuclear disarmament was drawn up containing the following aspects:

(1) concluding a Test-Ban Treaty 'no later than 1996'. In the meantime the Nuclear Weapon States would exercise 'utmost restraint' in this regard. The parties did partially keep their word. The CTBT was open for signature in September 1996 but its ratification will cause difficulties, as India refuses to sign.

Two of the Nuclear Weapon States did not, however, exercise 'utmost restraint' with regard to testing. Two days after the closure of the 1995 NPT Conference China continued her testing programme. One month later, President Chirac announced the resumption of the French nuclear tests in the South Pacific. Or does testing not fall under 'exercising utmost restraint'?

(2) concluding a convention that prohibits the production of fissile materials for military purposes. Such a so-called 'cut-off' treaty however is not in the making yet.

(3) 'the determined pursuit by the nuclear-weapon States of systematic and progressive efforts to reduce nuclear weapons globally, *with the ultimate goal of eliminating those weapons*, and by all states of general and complete disarmament under strict and effective international control 2'.²¹ It is significant that this text goes further than Article 6 of the NPT.

Also the review mechanism was reinforced. From now on Prepcoms will be held (almost) every year in preparation for the five-yearly review conferences. These preparatory meetings might – contrary to past practice – discuss fundamental (and not only procedural) aspects.

On the other hand, the member countries did not agree in 1995 upon a common Final Document regarding the five-yearly *review* conference. The most important obstacle was the criticism of many of the Non-Nuclear Weapon States that the Nuclear Weapon States had failed to meet their commitments concerning nuclear disarmament. Iran and Indonesia criticized most violently. But also Sweden – already a full member of the European Union at that time – stated that the conference should reconfirm that 'all nuclear weapons, according to the preamble of the NPT, should disappear from the earth'. Other difficulties concerned the existence of American nuclear weapons in Europe, and the case of Israel.

International Atomic Energy Agency (IAEA), established in 1957 in Vienna, is responsible for the controls provided for in Article 3.1 of the NPT. The Non-Nuclear Weapon States – once they have signed the NPT – are considered to conclude

within a certain time-period a bilateral agreement with the IAEA. The Nuclear Weapon States are exempt from these controls.

The IAEA controls only the nuclear material of the ± 900 declared civil installations in 50 countries worldwide. It therefore yearly disposes of 70 million dollars. In principle, the IAEA can also hold 'challenge inspections' in installations that have not been declared. However, this did not happen until the case of North Korea. Since the discovery of the secret Iraqi nuclear weapons programme during the Gulf War, the IAEA has been granted more power by means of the '93+2 program' (e.g. environmental monitoring).

The IAEA can always refer problems to the UN Security Council as in the case of Iraq and North Korea.

Export-Control Regimes are informal agreements between states concerning the export of sensitive products. With regard to nuclear products, attention should be drawn to the Zangger Committee and the Nuclear Suppliers Group (NSG) which were established in the seventies to draw up a list of 'sensitive' material regarding the production of fissile material. In other words, the participating states agree upon a common interpretation with respect to Article 3.2 of the NPT. Since 1992, goods which have both civil and military use (the so-called dual-use goods) also fall under NSG. Apart from the 15 member countries of the EU, the US, Russia, Japan, Australia and most of the Central European countries are also represented in this regime. In the future, as many 'new supplier states' as possible should be accepted.

Furthermore, the Missile Technology Control Regime (MTCR) aims to restrain the export of material that can be used for the production of missiles.

Regarding the implementation of these regulations, however, the national member states retain their sovereignty. That immediately reveals the weaknesses of those regimes. It is, for example, common knowledge that, despite these regimes, Western companies had supplied parts for the Iraqi nuclear weapon programme.

Security Guarantees A distinction has to be made between positive and negative security guarantees.

(1) By means of *positive* security guarantees the Nuclear Weapon States promise to help the Non-Nuclear Weapon States in case nuclear weapons are used against a Non-Nuclear Weapon State or in case a Non-Nuclear Weapon State is threatened with nuclear weapons. These states could for instance bring the conflict before the Security Council. The US, the former USSR and the UK have already agreed to this by means of Security Council Resolution 255 (1968). France and China (which both became members of the NPT only in 1992) endorsed it in 1995 by means of Resolution 984. However, one might wonder how credible these guarantees are, taking into account that all Nuclear Weapon States are also permanent members of the Security Council.

(2) *Negative* security guarantees constitute a promise of the Nuclear Weapon States never to attack Non-Nuclear Weapon States with nuclear weapons. Only China assents (openly) in this respect. The other Nuclear Weapon States still link conditions to these guarantees. These negative security guarantees, more particularly, do not apply to states that attack and that are not a member of the NPT or allied with an other Nuclear Weapon State. Many experts plead for *unconditional* negative security guarantees, certainly since the end of the Cold War.²² A corollary might be the acceptance of a 'no first use' doctrine (see Chapter 3).

The importance of these guarantees should not be exaggerated. The French Minister of Foreign Affairs at that time, Alain Juppé, has for instance publicly declared that if French vital interests are at stake, those guarantees will be out of question.²³

The 'principles and objectives' of the NPT Conference of 1995 suggest the setting up of 'an internationally legally binding instrument' with respect to security guarantees.

Nuclear Weapon Free Zones (NWFZ) The aim of an NWFZ is to free a certain region from nuclear weapons. The commitments of an NWFZ usually go further than those of the NPT.²⁴ Antarctica became an NWFZ in 1959. The Tlatelolco Treaty (1967) already existed before the NPT was signed and is related to Latin America. Now that Argentina, Brazil

and Chile have also signed the NPT, only Cuba remains behind. In 1986, the Pacific became an NWFZ by means of the Rarotonga agreement, the relevant protocols of which were signed by the former USSR in 1988, by China in 1989, and by the US, the UK and France in 1996. At the end of 1995, the ASEAN-member states proclaimed an NWFZ. Finally, the Pelindaba agreement, making an NWFZ of the African continent, was signed in April 1996.

NWFZs in more sensitive regions like Europe or the Middle East seem unlikely in the near future. Taking into account the political sensitivities of the Middle East, it would be better to convert it right away into a zone free from weapons of mass destruction. During the NPT review conference in 1995 a resolution was adopted calling on nearby states (without mentioning them by name) to establish a zone free from weapons of mass destruction and to become members of the NPT.²⁵

Other Agreements concluded to discourage nuclear proliferation are the Outer Space Agreement (1967), the Seabed Agreement (1972) and the Moon Agreement (1979) which prohibit the stationing of nuclear weapons in the respective areas.

2.2.1.2 Evaluation of these Traditional Nonproliferation Instruments

Since the production of the first nuclear weapon in 1945, there has been a fear of imitation. The American Manhattan project, for example, only started after Albert Einstein had warned of the existing German nuclear weapons programme. The former USSR carried out its first nuclear test in 1949. Three years later it was the UK's turn. France and China acquired nuclear weapons in 1960 and 1964 respectively.

President Kennedy feared that the world would relatively fast – within 20 years – be afflicted with 15–25 states possessing nuclear weapons. His fear turned out to be premature. The most important reason why nuclear weapons have not spread, was not the so-called successful nonproliferation regime but simply the fact that most states did not have the *intention* of acquiring nuclear weapons. At this

moment, about forty states are able to produce nuclear weapons.

Most observers agree that the traditional means of discouraging the spread of nuclear weapons are inadequate to discourage their spreading further. After all, it is technically quite easy to produce a rudimentary nuclear bomb. Detailed plans for the development of a first generation nuclear bomb (unlike hydrogen or thermonuclear bombs) are publicly available. The most frequently used technology is enrichment of uranium by means of gas centrifuge.²⁶

Acquiring the required nuclear fuel is by far the most difficult problem. Twenty kilograms of highly enriched uranium or 6 kg of plutonium are sufficient for a rudimentary nuclear bomb. Uranium is used as fuel in civil nuclear reactors. Plutonium is not a natural material, but remains as a residue after nuclear fission of uranium in nuclear reactors. Plutonium is very poisonous and has a half-life of 24 000 years. Separated (or 'reprocessed') plutonium has the 'advantage' that it does not have to undergo the technically more difficult enrichment process (such as in the case of uranium), but that it can immediately be used for the production of nuclear weapons.

The enormous amounts of nuclear fissile material that are released because of the dismantling of the existing nuclear arsenals and because of the civil reprocessing programmes increase the likelihood of illegal transfers.

To conclude this section, Israel (with the help of France and the US), India (with the help of Canada), Pakistan (with the help of the Netherlands and Germany) and South Africa (with the help of Germany and Israel) have proved in the past that the existing nonproliferation regime cannot resist the further spread of nuclear weapons.²⁷ The nineties brought even bigger surprises. Iraq and North Korea demonstrate that membership of the NPT is no guarantee against proliferation.

The nonproliferation instruments have a restraining influence on the limiting of the number of nuclear weapon states. The traditional nonproliferation approach, however, is *insufficient* to make future proliferators give up their plans. States that have enough time, money and energy will

undoubtedly succeed in producing nuclear weapons in the short, medium or long term. Both advocates and opponents of nuclear weapons agree on this. David Clapper, head of the American military secret service DIA, stated it as follows: 'While it is possible to slow the proliferation of these weapons, a country that is intent on gaining such a capability will eventually do so.'²⁸

The miserable situation of the Russian arsenal (the so-called 'loose nukes') and the possible brain drain aggravate the nonproliferation efforts even more. The 'Cooperative Threat Reduction' programme (the former Nunn-Lugar programme) of the US tries to respond to the unstable situation in Russia.

2.2.2 'Extended Deterrence'

By spreading a nuclear umbrella over the territory of other states, states are discouraged from acquiring nuclear weapons themselves. The US, for example, put part of its nuclear arsenal and the UK its complete arsenal at the disposal of the Atlantic Alliance.²⁹ One of the main reasons was to discourage Germany from becoming a nuclear weapon state (which is also forbidden by the German constitution). As late as 1991, the American Secretary of Defense, Dick Cheney, made the following link: 'If the United States cuts back so much that all we can do and all we can talk about is defending the continental United States, we'll create an incentive for other nations that do not now feel the need to develop their own nuclear arsenals to do so.'³⁰

However, a nuclear umbrella in itself is not enough to prevent states from obtaining nuclear weapons. France – in spite of the American nuclear umbrella – considered it 'necessary' to acquire nuclear weapons itself. Richard Betts, supporter of nuclear deterrence, also draws attention to this 'umbrella fallacy'.³¹

Some advocates of nuclear deterrence (ab)use the possible positive side effects of a nuclear umbrella (particularly nonproliferation) to fight further nuclear disarmament.³² This is illogical. Firstly, nuclear umbrellas cannot unequivocally be considered as a nonproliferation instrument, for they legitimize nuclear weapons. Secondly, nuclear disarma-

ment including the removal of nuclear umbrellas is an absolute condition to fight nuclear proliferation in the long term.

2.2.3 Nuclear Deterrence as an Answer to the ‘New’ Nuclear Risks

The Nuclear Weapon States still dispose of a large number of nuclear weapons. However, those of the US, the UK and Russia are no longer targeted on each other’s territory (but preserve the ability to attack as rapidly as ever since the targets are retained in computer memory³³). The hair-trigger alert rates on SLBMs are still the same as during the Cold War. As far as we know the levels of readiness on ICBMs have not changed significantly either. Only the bombers are on a significantly lower level of alert. There are not constantly a few bombers per airbase manned as was previously the case.

During the Cold War, nuclear weapons were legitimized to prevent a *nuclear* attack and – in the case of Western Europe – also to prevent a large-scale conventional attack. Since these threats have gone, the role of nuclear weapons has also been reviewed. The result, however, is neither convincing nor credible. As the traditional nonproliferation instruments do not suffice, the Nuclear Weapon States fall back on their own nuclear weapons to deter possible proliferators.

NATO, for instance, correctly states that the importance of nuclear weapons as a security instrument has diminished in comparison with the Cold War. At the NATO summit in London in 1990, it was even agreed to call nuclear weapons ‘truly weapons of last resort’. Under pressure from the European Allies, especially France, these words have been deleted in the ‘NATO Strategic Concept’ of November 1991. The latter clearly stresses again the importance of nuclear deterrence: ‘Nuclear weapons make a unique contribution in rendering the risks of any aggression incalculable and unacceptable. Thus, they remain *essential* to preserve peace’ . . . ‘The fundamental purpose of the nuclear forces of the Allies is political: to preserve peace and prevent coercion and any kind of war. They will continue

to fulfill an *essential* role by ensuring uncertainty in the mind of *any* aggressor about the nature of the Allies' response to military aggression. They demonstrate that *aggression of any kind* is not a rational option.³⁴

Nuclear deterrence seems to become a preventive for all kinds of risks, including the threat of CBW attacks. The Gulf War further stimulated this evolution. NATO's Senior Defense Group on Proliferation concluded in 1996: 'Complementing nuclear forces with an appropriate mix of conventional response capabilities and passive and active defenses, as well as effective intelligence and surveillance means, will reinforce the Alliance's overall deterrence posture against the threats posed by proliferation.'³⁵

The vagueness with respect to the possible nuclear reaction on behalf of the Nuclear Weapon States, however, increases general uncertainty. This is not automatically advantageous to the Nuclear Weapon States if, for example, the enemy is less 'rational' or has got less to lose.³⁶

At the end of 1993, Russia too – partly due to the de-generation of its conventional arsenal – implicitly abolished its declared 'no first use' policy (dating back to 1982).

How Credible are the Present Doctrines of Nuclear Deterrence? In Chapter 1 it was shown that the problem of credibility is intrinsic to nuclear deterrence. In the post-Cold War period the nuclear deterrence doctrines of the former enemies (on the one hand, the US, UK and France, on the other hand Russia) are even less credible.³⁷ Here again, we make a distinction according to the nature of the attack.

2.2.3.1 Nuclear Deterrence against an Attack with Conventional Weapons

No state has currently the intention and the capability to attack the vital interests of one of the Nuclear Weapon States with *massive conventional* means – the only option against which nuclear deterrence might have a chance of being taken seriously. This will not radically alter in the foreseeable future. Even in the hypothetical case of such an attack, conventional means are more than sufficient to react effectively.

2.2.3.2 Nuclear Deterrence against an Attack with Chemical/Biological Weapons (CBW)

Despite the Biological Weapons Convention (1972) and the Chemical Weapons Convention (1993), more and more developing states are producing or buying CBW (and ballistic missiles). Rogue states might use these 'atomic weapons of the poor' in two broad ways: (1) for attacks on cities in, for example, Europe or Russia with intermediate-range ballistic missiles, cruise missiles or aircraft from, for example, the Middle East (leaving the US still out of range for a long time); (2) for attacks with CBW against an international military force based, for instance, in the Middle East, North Africa or the Far East.

The present nuclear doctrines of the Nuclear Weapon States (except for China) do not exclude a nuclear counter-attack in case of an attack with CBW. The former American Secretary of Defense, William Perry, stated as follows:

Despite our best efforts to reduce the danger of weapons of mass destruction, it is still possible that America – and our forces and allies – could again be threatened by these terrible weapons. That is why it is important for the United States to *maintain* a small but effective *nuclear* force.³⁸

In Chapter 1, however, it was made clear that nuclear deterrence against CBW is not (very) credible.³⁹ The main argument is that a nuclear counterblow is not in proportion to the inflicted damage. In other words, the destructive capacity of nuclear weapons is much higher than that of CBW. Besides, militaries, and to a lesser degree citizens as well, can protect themselves better against attacks with CBW.⁴⁰

RAND experts recently stated: 'While some calculated ambiguity about the US retaliatory intentions serves a useful purpose, deterrence is not well served if the US declaratory policy is so unclear that aggressors do not understand the possible consequences of using biological or chemical weapons.'⁴¹ Harald Müller and others believe that there is a good chance that nuclear deterrence against weapons of mass destruction of proliferating states (CBW or nuclear) *will* fail.⁴²

These doctrines are also completely incompatible with the negative security guarantees offered by the Nuclear Weapon States to the Non-Nuclear Weapon States. To prevent the further proliferation of nuclear weapons, these unilateral guarantees are in fact a promise of the Nuclear Weapon States not to attack the Non-Nuclear Weapon States with nuclear weapons provided that the Non-Nuclear Weapon State is a member of the NPT and is not allied with a Nuclear Weapon State.

If such a Non-Nuclear Weapon State uses CBW against a Nuclear Weapon State, the latter has to decide whether or not to launch nuclear weapons. Here, the concerned Nuclear Weapon State faces a dilemma. If nuclear weapons are used the way the doctrine prescribes, it would mean a breach of the negative security guarantees; conversely, not using nuclear weapons would further undermine the credibility of the nuclear deterrence doctrine in the future. President Mitterrand escaped this dilemma by excluding *a priori* the use of French nuclear weapons in response to a potential chemical weapons attack by Iraq during the Gulf War.⁴³

Moreover, how can, for instance, Iraq or Iran be convinced not to *acquire* nuclear weapons, if at the same time the Nuclear Weapon States – each individually disposing of conventional means that are more extensive than those of any proliferator – stick to their nuclear weapons to deter a possible attack with the much less destructive CBW?

Towards a New Generation of Nuclear Weapons? To circumvent the problem of proportionality, some experts plead for the development of small, usable nuclear weapons equivalent to 10–1000 tons of TNT.⁴⁴ These proposals to some extent transgress the concept of nuclear deterrence. In this respect, the ‘Doctrine for Joint Nuclear Operations’ of the US Joint Chiefs of Staff in 1993 asked for ‘a selective capability of being able to use lower-yield weapons in retaliation, without destabilizing the conflict’.⁴⁵ The logic behind this – as for instance stated by nuclear experts from the Los Alamos National Laboratory – is the following:

The vast disparity in explosive power between conventional and nuclear weapons may leave future Presidents

with having to choose between weapons that are ineffective and weapons that are unacceptable, between defeat in battle and defeat in world public opinion.⁴⁶

Mininukes or micronukes would be the answer.

While in the US and Russia especially militaries and laboratories⁴⁷ are in favour of developing such weapons, in France also some of the politicians seem to support the idea of 'mininukes'.⁴⁸ Is it, for example, a coincidence that in 1994 the French Minister of Defence Léotard made clear that the modernization and miniaturization of nuclear weapons would make new nuclear tests absolutely necessary and that one year later the French resumed nuclear testing?⁴⁹

To be perfectly clear, the official doctrines of the Nuclear Weapon States are (still) *not* in favour of 'mininukes'. But the Nuclear Weapon States agree that nuclear deterrence by punishment/retaliation does not work to the same degree against proliferating states as it 'worked' during the Cold War. Therefore, the US Counterproliferation Initiative of 1993 foresees: 'New approaches are needed as well as *new strategies* should deterrence fail.'⁵⁰ Robert Joseph of the US National War College favours a deterrence through denial strategy.⁵¹ In Chapter 1 we concluded however that this doctrine is more destabilizing. In addition, such an evolution towards smaller and usable nuclear weapons would jeopardize the entire nonproliferation regime, if only by again legitimizing nuclear weapons.⁵²

Modern Conventional Weapons The major question is whether (modern) conventional weapons are a valid alternative to deter the use of CBW by proliferators – to the extent that deterrence in any case has some effect on rogue states. The French Defence White Paper of 1994 is clear with respect to modern conventional weapons: 'It is illusionary and dangerous to claim that such technologies could have the effect of preventing war as nuclear weapons do.'⁵³

More and more experts however disagree with this line of thinking and believe that modern conventional weapons are, indeed, a valid alternative to deter the use of CBW.⁵⁴

2.2.3.3 Nuclear Deterrence against an Attack with Nuclear Weapons by a proliferator

The Nuclear Weapon States also legitimize their nuclear weapons by pointing out the danger of a further spread of nuclear weapons.⁵⁵ Former American Secretary of Defense William Perry explains that the US distinguishes three lines of defence with regard to the spread of weapons of mass destruction: (1) prevention; (2) deterrence; (3) protection if deterrence fails. 'The second line of defense is to deter the use of these weapons by maintaining strong conventional military forces and a residual nuclear force, which is still quite powerful.'⁵⁶

For the present, this makes no sense because until now there has been (as far as we know) no rogue state that openly disposes of nuclear weapons. And what about the future? What if a proliferator succeeds in producing nuclear weapons? In that case, the danger exists that the political leaders in these countries are not deterable at all (see Chapter 1). Former American Secretary of Defense William Perry agrees on this point: 'Nuclear weapons in the hands of rogue nations or terrorists are especially dangerous because, unlike the nuclear powers during the Cold War, they might not be deterred by the threat of retaliation.'⁵⁷ The question that immediately arises is the following: what is the use of retaining nuclear weapons to deter these undeterable countries? Is it worth waiting until such a proliferator de facto exists? Finally, does not each Nuclear Weapon State possess enough conventional means to deter and, if necessary, attack proliferators? Even Paul Nitze pleads for modern conventional weapons: 'They are safer, cause less collateral damage and pose less threat of escalation than nuclear weapons do.'⁵⁸

To conclude, the peak of the nuclear arms race is over and the former superpowers are disarming, simply because it is in their own interest. However, the Nuclear Weapon States are walking on a dangerous path. They now legitimize the remainder of their nuclear arsenals *because* of the proliferation of weapons of mass destruction.

We have tried to demonstrate that these doctrines of the Nuclear Weapon States (to a lesser degree China's doc-

trine) are not very credible. Nuclear deterrence with respect to attacks with nuclear weapons is the most plausible of all and will be the last doctrine that will be given up.

Other Dangers of Nuclear Deterrence: Accidents, Terrorism, Proliferation Holding on to nuclear deterrence increases the chance of accidents with nuclear weapons as well as the risk of nuclear terrorists getting control of nuclear weapons.

In Russia, the risk of unauthorized use grows. Bruce Blair, a former US missile launch officer and current analyst at the Brookings Institute, warns: 'The Russian military has all of the codes necessary to initiate a missile attack.'⁵⁹ This applies especially with regard to the 20 000 tactical nuclear weapons dispersed in the former Soviet Union.

The greatest difficulty with the status quo is that the current doctrines – and in particular the possibility of a 'first use' – legitimize nuclear weapons. In this way, one admits that nuclear weapons are *always* necessary, apart from any realistic scenario, apart from any threat. The Nuclear Weapon States send the following message to the rest of the world (being the Non-Nuclear Weapon States): *nuclear weapons are politically and/or militarily useful. They are essential to secure our vital interests and our existence.* Here, we refer again to the concept of existential deterrence (see p. 27).

In this way, other states (situated in more unstable regions) are indirectly stimulated to acquire nuclear weapons as well.⁶⁰ In other words, the Nuclear Weapon States stimulate at least indirectly the spread of nuclear weapons.

The problem is that each new nuclear weapon state multiplies the above-mentioned risks. It becomes *more* likely that nuclear deterrence will fail, that these weapons will fall into the hands of extremist leaders or terrorists or that a serious accident will happen.

2.2.4 Counterproliferation

The concept 'counterproliferation' has been much debated.⁶¹ The idea follows logically from the conclusion that the proliferation of nuclear weapons can be curbed, but not stopped. Counterproliferation which is a non-nuclear

instrument becomes necessary at the moment that nonproliferation fails, in other words when a proliferator of weapons of mass destruction turns up.

NATO still sticks to the concept of 'nonproliferation', but now adds the following: 'As a defensive alliance, NATO is addressing the range of capabilities needed to discourage weapons of mass destruction proliferation and use. It must also be prepared, if necessary, to *counter* this risk and thereby protect NATO's populations, territory and forces.'⁶³

'Counterproliferation' actually includes better intelligence with respect to proliferation, better safety measures to operate in an environment in which weapons of mass destruction are being used, and above all the development of mobile anti-missile systems in order to protect a city or region against attacks with missiles, and preventive attacks.

2.2.4.1 *Ballistic Missile Defence (BMD)*

These are systems which, with a little good will, can be described as being a mixture between Patriots, used against the Scud attacks of Iraq during the Gulf War, and the Strategic Defense Initiative (SDI or 'Star Wars'). At this moment the US, Russia, a consortium of West European countries, and also Israel are developing such BMD systems.

The following critical remarks can be made concerning BMD:

First, since it is (particularly) the Nuclear Weapon States that are developing BMD systems at the present time, we logically have to conclude that even the Nuclear Weapon States seem to consider that nuclear weapons are insufficient as a deterrent. The US, for instance, openly admits that deterrence might not work *vis-à-vis* a rogue state. Therefore, the US considers BMD systems now as an essential part of their defence against the spread of weapons of mass destruction. It is their last line of defence (after prevention and deterrence). By admitting the possible failure of nuclear deterrence in these cases, is the general concept of nuclear deterrence not further undermined?⁶³

Second, the danger exists that with the development of BMD the ABM Treaty of 1972, of crucial importance for further nuclear disarmament, will be violated. In April 1996, the newly established Coalition to Reduce Nuclear Dangers

– an alliance of US arms control organizations like the Arms Control Association, the British American Security Information Council, the Federation of American Scientists, the Henry Stimson Center, the Lawyers Alliance for World Security and others – issued a Statement of Principles in which they heavily opposed ballistic missile defence systems (except lower-velocity Theater Missile Defenses).⁶⁴ One of their main arguments is the likely violation of the ABM Treaty.

The ABM Treaty sets a limit for the US and Russia to the number of anti-ballistic missile systems. The logic behind the ABM Treaty is the following: if one party considers itself invulnerable because of BMD systems, there will be a greater risk of a ‘first strike’ by the so-called invulnerable. In that case, the other side will be less willing to continue to disarm. In other words, the deployment of advanced ballistic missile defence systems might exacerbate the disarmament process. Bruce Blair fears that in Russia, for instance, in that case more and more people will favour pre-emptive attacks.⁶⁵ The effect of the nuclear deterrence strategies of France and the UK *vis-à-vis* Russia would, to a considerable degree, also be undermined if Russia were to install more BMD systems.

The distinction between ‘theatre’ (which would be allowed) and ‘strategic’ is not made explicit in the ABM Treaty. Therefore, the US and Russia engaged in bilateral negotiations in order to clear up the demarcation line between both systems. Finally, Russia gave in.⁶⁶ All BMD systems with a low interceptor velocity (not exceeding 3 km/s) could be tested against missiles with a range no greater than 3500 km or a velocity no greater than 5 km/s.⁶⁷ The US lower-tier systems like the Army’s Patriot Advanced Capability, the Navy Area Defense system, and the Medium Extended Air Defense System (MEADS) can be used against short-range ballistic missiles (like the Scuds). Some 30 states possess short-range ballistic missiles. Some of them have also acquired biological or chemical weapons. It must be clear that the threat of a CBW attack only exists for troops deployed abroad. However, the US Army’s Theater High Altitude Area Defense (THAAD) and the Navy Theater Wide System are upper-tier systems able to protect larger areas (like an army division or a metropolitan area). Critics like

Ted Postol and Frank von Hippel claim that such systems can be used as a national missile defence system. The latter would be in contravention of the 1972 ABM Treaty.⁶⁸ In 1995 the US also started with the development of a *National* Missile Defense system against possible attacks with ICBMs from rogue states in the future. Despite the pressure of the Republican Congress, President Clinton has used his veto *against* actual *deployment*. Within fifteen years no country will be able to attack the US with weapons of mass destruction installed on ICBMs.⁶⁹ The goal however remains to dispose of the appropriate technology at the time the danger exists. Such a nation-wide system however would clearly be in contravention of the 1972 ABM Treaty.

Third, BMD systems are very expensive. Three billion dollars are yearly spent on BMD in the US alone. The total cost for THAAD, for instance, equals 10.3 billion dollars. From the contractors' point of view, BMD systems are of course warmly welcomed.

Fourth, BMD might create a false feeling of security against the nuclear threat as there are many other vectors or delivery means for nuclear weapons.

Finally, who guarantees that such a BMD system is 100 per cent watertight? Supporters of BMD argue that: (a) each missile destroyed is a success, and (b) that the installation of such systems produces at least a psychological effect. The counter-argument is that if only one missile with one H-bomb penetrates through the BMD system, enormous destruction will be the result.⁷⁰

To conclude, BMD will undoubtedly decrease both the objective and the subjective risk with respect to missile attacks with weapons of mass destruction. A 100 per cent safe system, however, does not exist. Besides, it is extremely expensive and there are negative side effects: violation of the crucial ABM Treaty and undermining of the existing nuclear deterrence doctrine. In our view, the installation of BMD will only be appropriate if at the same time further disarmament steps are being taken.

2.2.4.2 *Preventive Attacks*

A next step would be the *preventive elimination* of future proliferators. In this respect, we again refer to the example of the Israeli attack with F-16s on the nuclear reactor

in Osiraq (Iraq) in 1981. Michael Mandelbaum argues that a second Hiroshima will side American public opinion with the idea of preventive attacks.⁷¹

Conventional means will suffice for these preventive attacks, although some also plead for the development, production and use of smaller *nuclear* weapons. Harold Smith, Assistant to the US Secretary of Defense, said in April 1996 with regard to a possible attack on the Libyan chemical plant in Tarhunah that the B-61 Mod II 'would be the nuclear weapon of choice'.⁷² The same logic probably applies to *nuclear* proliferators.

It is obvious that preventive attacks are only a short-term solution. The duped state will, more than ever, have the intention to repair the damage as soon as possible and to intensify its nuclear weapons programme. Iraq during the eighties is an outstanding example of this. The Gulf War can be considered as a preventive war. It destroyed the nuclear installations of Iraq and 'the international community' imposed permanent controls by the UN on the remaining installations.

Such circumstances however are rare in international politics. The international community will not always agree on sanctions. In addition, how can the Nuclear Weapon States legitimize preventive attacks against emerging nuclear weapon states while the former refuse to eliminate their own nuclear weapons? It must be clear that an evolution towards more preventive attacks would jeopardize the overall nonproliferation regime.

2.3 CONCLUSION

The international community has to make a crucial choice: on the one hand, retaining the current nonproliferation regime, possibly completed with additional measures without fundamentally questioning the doctrines of the Nuclear Weapon States based on nuclear deterrence; on the other hand, a gradual marginalization of nuclear weapons resulting in term in a nuclear weapon free world.

Supporters of nuclear deterrence say that striving for an NFW is 'utopian', 'unrealistic', 'simplistic'⁷³ and 'naïve'. They reason as follows: nuclear deterrence is effective; look at the

Cold War; the NPT is a success, for the number of nuclear weapon states is limited to eight; besides, the NPT has recently been extended for an indefinite period; thanks to additional nonproliferation measures, it will become even more difficult to acquire nuclear weapons in the future; and if a proliferator turns up, there are still diplomatic actions (related to economic 'sticks and carrots') as in the case of North Korea (which has received compensation of 4 billion dollars), or military means such as preventively bombing Iraq. Last but not least, let us develop an anti-ballistic missile system just in case a 'rogue state' succeeds in acquiring and launching ballistic missiles with weapons of mass destruction. Each alternative (including arms control and disarmament) automatically leads to a higher degree of instability.⁷⁴

It is this short-term reasoning that still prevails. In Chapter 1 we tried to demonstrate that nuclear deterrence also involves risks. There is a very good chance that these risks will overshadow the so-called advantages of nuclear deterrence (in particular stability) in the long term. Advocates of nuclear deterrence minimize the chances of nuclear deterrence failing. They also underestimate the possibility (and consequences) of an accident with nuclear weapons. Additionally, they uphold the theory that nuclear weapons can be kept away from terrorists.

The geopolitical situation has totally changed since 1989. In this chapter, we have argued that one of the basic conditions for nuclear deterrence, more particularly the credibility of the nuclear strategy, is no longer fulfilled. The bipolar world system has gone. The relatively simple (deterrence by punishment) and more complex (deterrence by denial) theories of deterrence that were related thereto may be written off as well.

The further spread of nuclear weapons is correctly described as one of the most alarming threats to international peace and security. More states with nuclear weapons implies an increased chance that nuclear weapons will be *used*. The possibility of nuclear weapons being used even increases more than proportionally because of the structural characteristics of emerging proliferators.

Those who believe that the limited use of nuclear weapons is no problem in itself should think about the addi-

tional argument that once the taboo regarding the use of nuclear weapons has been broken, imitation might follow. This increases the risk that such limited attacks with (rudimentary or thermonuclear) nuclear weapons will at some time escalate to a massive nuclear war. Stating that a massive nuclear war in the post-Cold War period is no longer possible is premature. As mentioned above, the use of 300 strategic nuclear warheads of 1 mt are sufficient to cause a so-called nuclear winter.

The current nonproliferation regime is certainly not able to halt the further spread of nuclear weapons. Even additional measures (such as a reinforcement of the competences of the IAEA, tightening the export-control regimes) are only restraining factors. A state that has enough time, energy and financial means to acquire nuclear weapons, will undoubtedly pursue its aim in the short, medium or long term.

Holding on to nuclear deterrence in spite of the involved dangers and the commitments of the NPT to disarm will *stimulate* indirectly the further spread of nuclear weapons. Article VI of the NPT also relates proliferation to disarmament. The same applies to the secret American Gilpatrick report of 1965: 'It is unlikely that others can be induced to abstain indefinitely from acquiring nuclear weapons if the Soviet Union and the United States continue in a nuclear arms race.'⁷⁵ Even former US Secretary of Defense Perry accepts the link between horizontal and vertical proliferation. In October 1996 he stated: 'By reducing our (nuclear) arsenals, we reduce the risk that nuclear weapons or nuclear material will fall into the wrong hands.'⁷⁶

Some supporters of nuclear deterrence do not see this link, or rather, do not *want* to see it. They argue that 'rogue states' do not acquire nuclear weapons because the Nuclear Weapon States dispose of nuclear weapons, but because the regional security situation *forces* them to acquire nuclear weapons. That may be correct. However, they do not take into account that acquiring nuclear weapons has an enormous impact on the security situation of the neighbouring states. Consequently, the risk of a nuclear domino effect exists. At this moment, Pakistan already legitimizes its nuclear weapon programme by pointing to that of India.

India (especially) refers to China and China refers to the US and Russia. If nuclear weapons are considered to be of vital importance for the security of, for instance, France – a state which is situated in the most stable region of the world and is embedded in one of the most successful alliances that ever existed – why then would nuclear weapons not be useful for a state such as Iran (that is situated in a less stable region)? And what implications will such a nuclear Iran or Iraq have for the Middle East and beyond?

Eliminating proliferators preventively only has a short-term effect and undermines the existing nonproliferation regime. Iraq has made clear that after the attack on its nuclear weapon programme at the beginning of the eighties, it more than ever had the intention to acquire nuclear weapons (and almost succeeded). Repeated preventive bombings cannot be maintained as long as the Nuclear Weapon States continue to hold on to nuclear weapons themselves and as long as they are convinced that nuclear weapons are of 'vital' importance to them.

3 Nuclear Arms Control in the Future: Heading Towards a Nuclear Weapon Free World

INTRODUCTION

Despite the feeling that the nuclear threat has gone, the risks inherent to nuclear deterrence have not by any means disappeared in the post-Cold War era. The so-called stabilizing effect of nuclear deterrence is being questioned for two reasons: (1) the incredibility of the current nuclear doctrines, especially nuclear deterrence against conventional and CBW attacks; (2) the further spread of nuclear weapons. The possibility that nuclear weapons – authorized or not – will be used again increases.

As a result, almost everybody is convinced that the process of nuclear disarmament should continue. At a minimum, a credible second-strike capability *vis-à-vis* another nuclear weapon state does not require thousands of nuclear weapons. After the planned implementation of START II in the year 2003 (delayed until 2007), both the US and Russia will still hold about 3500 strategic nuclear weapons *deployed*.

Both the US and Russia are capable of dismantling nearly 2000 nuclear weapons a year. From a technical point of view a zero level might be reached before the year 2010. In reality, of course, there have to be reckoned with all kinds of political developments both in and outside the Nuclear Weapon States.

In addition, not everybody is convinced that a Nuclear Weapon Free World (NWFW) offers most guarantees for more safety. One of the arguments raised most frequently *against* an NWFW is that nuclear weapons cannot be disinvited. The reasoning behind this is that *because* the

knowledge to produce nuclear weapons is available, a NFWF is not achievable and hence not desirable. In 1982, a Harvard study put it bluntly:

Humanity has no alternative but to hold this threat at bay and to learn to live with politics, to live in a world we know: a world of nuclear weapons, international rivalries, recurring conflicts, and at least some risk of nuclear crisis. The challenge we face is not to escape to a fictional utopia where such problems do not exist.

The study ends: 'living with nuclear weapons is our only hope.'¹

Ken Booth, in contrast, points to the simplifying nature of nuclear deterrence. In some way, nuclear weapons take away politics from international politics and replace it with a technique.²

The key questions that arise in Chapter 3 are the following: Is a nuclear-free world desirable? And if so, is it feasible? These questions are complementary since the feasibility influences the degree of desirability. The more an NFWF looks feasible, the more supporters the idea might attract. Inversely, the realization of an NFWF becomes more attainable if one thinks it to be desirable. The more an NFWF is put forward as a policy goal, the more financial means will become available to develop and to build a far-reaching verification system. In order to achieve something, motivation is sometimes as important as the instruments that are available.

On that account, the *political will* to realize an NFWF – particularly in the Nuclear Weapon States – is the crucial factor. The latter depends to a substantial extent on the interests of the actors. In an 'anarchic' world society³ – a world without world government – states remain the primary actors, especially with regard to security and defence. The goal of Chapter 3 is to show why an NFWF is in the interests of both the Non-Nuclear Weapon States *and* the Nuclear Weapon States.

3.1 IS A NUCLEAR WEAPON FREE WORLD DESIRABLE?

The question whether an NFWF is desirable has nothing to do with striving for some kind of ideal world. An NFWF has to be equated with existing or still-to-be created alternative worlds. The pros and cons of a world *without* nuclear weapons on the one hand and a world *with* nuclear weapons on the other have to be compared. Do the risks inherent in an NFWF outweigh the dangers associated with maintaining nuclear deterrence as a security instrument in the international political system? This question has to be answered distinctly by the international community in the short or medium term.

Because the dangers inherent in nuclear deterrence have been largely covered earlier in this book, we will now discuss the possible dangers of an NFWF.

3.1.1 Risks in an NFWF and Possible Solutions

Opponents distinguish two potential risks in an NFWF: first the risk of more instability, and second the risk that a state or non-governmental actor may succeed in secretly producing nuclear weapons and that he threatens to use them.

3.1.1.1 'Increased Instability'

Advocates of nuclear deterrence point out that an NFWF eliminates the so-called stabilizing effect of nuclear deterrence.⁴ They always refer to the Cold War. An NFWF therefore would be characterized by more conflicts.

Five rebuttals could be made with respect to this hypothesis:

(1) Nuclear empirical research covers a period of only 50 years. It is thus merely an assumption that nuclear weapons create stability. Firstly, there are other factors which brought about the so-called stability between the superpowers (see Chapter 1). Secondly, it is just as easy to point to some *destabilizing* consequences of nuclear deterrence. Recent documents have shown that through a combination of the intense crisis atmosphere and some accidents during the Cuba crisis in October 1962, a worldwide disaster was barely avoided. The border conflicts between the former

USSR and China in 1969 are another example of 'stability'. What about the Non-Nuclear Weapon States which dared to attack nuclear weapon states: Syria and Egypt against Israel in 1973; Argentina against the UK in 1982?

Conversely, nuclear weapons by definition do not cause instability. The stable political relationship between, for instance, the UK and France has never been endangered despite their nuclear arsenals. In general, however, existing political tensions and the associated instability are mostly intensified by installing nuclear weapons. The threat of using nuclear weapons is not an indication of reciprocal confidence, to say the least.

Finally, the Cold War can be used by both advocates and opponents of nuclear weapons in demonstrating respectively the effectiveness or ineffectiveness of nuclear deterrence. Indeed, in some cases nuclear weapons may bring about a stabilizing effect. In spite of this, the point is that nuclear deterrence may also promote instability. In any case, nuclear weapons are no universal remedy to prevent violent conflicts. That is why we claim that nuclear deterrence does not work in theory.

(2) Even supposing nuclear weapons promote a stabilizing effect (as the advocates of nuclear deterrence believe), the question needs to be asked which tensions *currently* require the threat of nuclear weapons. Tensions between the USA and Russia? Between France and Russia? Between the UK and Russia? Between China and Russia? Between the USA and China? Between France and China? Between the UK and China? Does there exist a bipolar confrontation like the one during the Cold War? The answer is eight times 'no'. In what region would instability rise after eliminating all nuclear weapons?

It is true that the three threshold states Israel, India and Pakistan are all situated in politically tense regions. As a consequence, the political situation in the Middle East and South Asia has to be further clarified before the idea of an NFWF might be carried out. On the other hand, the nuclear programmes of these states have become a part of the (political) problem. Turning this logic upside down, the realization of a zone free of weapons of mass destruction in the Middle East or South Asia would be an ex-

tremely stimulating confidence-building measure and bring a political solution closer.

(3) Even if nuclear weapons have a stabilizing effect (as the Nuclear Weapon States believe), the question needs to be asked whether the same result cannot be obtained with other – read safer – means. Clearer communication between the US and the USSR during and immediately after the Second World War, for instance, could have made a fundamental (but, I agree, not verifiable) difference.

The installation of a hotline between the presidents of the US and the former USSR after the Cuba crisis contributed to the fact that conflicts never again reached the same level of escalation.

Furthermore, alternative non-nuclear conflict management instruments should be developed to curb existing tensions. Here we think of confidence and security-building measures (CSBMs), more and better communication, conflict prevention, early-warning and the creation of security communities. For instance, a new tendency to the right in Russia should be no reason to halt further nuclear disarmament. A constructive solution might be the integration of Russia into a new European security system. This would guarantee the prestige of Russia in a non-nuclear way and would take the wind out of the sails of political extremists.

(4) Many experts are confident – and this is crucial – that *modern* conventional weapons have the same or at least a sufficiently deterring and stabilizing capacity as nuclear weapons (see Chapter 2). The use of modern conventional weapons may inflict enormous damage as well. The evolution in destructive capacity of conventional weapons is demonstrated by the following numbers: 4500 B-17s (used during the Second World War) or 95 F-105s (used during the Vietnam War) each have to drop two bombs to obtain the same destructive capacity as one F-117 dropping one bomb of a similar weight (900 kg).⁵

The big ‘advantage’ of modern conventional weapons instead of nuclear weapons is that the risk of the destruction of the whole of civilization is negligible compared to the current situation.

Critics are right to point out that modern conventional weapons are presently being developed mostly by the US.⁶

This is also one of the reasons why the US seems to have more interests in the marginalization of nuclear weapons and in an NFWF than for instance France or Russia. Of course, it needs to be sharply monitored that the elimination of nuclear weapons does not lead to a conventional arms race.

(5) Finally, even in the case that an NFWF is less stabilizing (which we do not believe), then the question still arises whether a few more conventional wars in the short term do not outweigh one or more nuclear wars in the medium or long term.⁷

3.1.1.2 The Risk of 'Break-Out'

A *step-by-step* process towards an NFWF must guarantee that no state will risk becoming a nuclear pariah at the moment of the entry into force of the treaty. A moral-political climate must be created in which nuclear weapons are entirely delegitimized. Critics would argue that there always will exist the risk that a state or a non-governmental actor secretly or openly tries to build nuclear weapons. The relative weight of one nuclear weapon is bigger in an NFWF than in a world with hundreds or thousands of nuclear weapons. Nevertheless, it is still not clear what the advantages are of possessing one or a few nuclear weapons in an NFWF. In the 'best' case – from the point of view of the offender – he will only briefly enjoy the benefits he may obtain by having a nuclear monopoly, while the rest of the world will restart building nuclear weapons. In the 'worst' case the offender will be bombed to the pre-nuclear era and will be isolated, while the rest of the world will redeploy nuclear weapons. This does not look very attractive. Therefore, the risk of such a 'break-out' is small.

In addition, states which are unable to produce nuclear weapons at the time an NFWF becomes reality will face even stronger obstacles to acquiring nuclear weapons in a denuclearized world because of the verification system that will be set up. Sanctions have to deter possible offenders as well. These conditions make the risk of 'break-out' very small.

3.1.2 Absolute Requirements for an NFWW

It should be noted that conditions like the establishment of a world government, a completely disarmed world, a world without (violent) conflicts, or a world containing only democracies are not a *conditio sine qua non* for an NFWW.

There are three basic requirements for an NFWW: (1) universality; (2) an intrusive verification regime; and (3) sanctions.

3.1.2.1 Universality

It goes without saying that an NFWW, by definition, is not achievable if one or several states refuse to participate. The possibility that this would happen is slim, since the realization of an NFWW is in the interest of all states. In addition, an NFWW is one of the most important objectives of the NPT or, at least, of the politically binding text of the 1995 NPT Extension Conference. Only a couple of states have not signed the NPT and there are many indications that those countries also are entirely in favour of an NFWW. Pakistan has already stated that it will give up its nuclear weapons programme if India is prepared to do the same. India, in turn, points to China (which as a member of NPT is – in principle – in favour of an NFWW) and to Pakistan in the second place.

Israel will be the biggest stumbling block. Future negotiations within the region might end up with a zone free of weapons of mass destruction. The effect of such a zone might build trust serving the peace process. A bilateral peace agreement between Israel and Syria would create a new momentum in the short term. Nevertheless, additional security guarantees would have to be provided for Israel in the transition period.

3.1.2.2 Verification

The effectiveness, and accordingly the credibility, of arms control agreements depends to a great extent on the degree of verification. The big advantage of an NFWW is that (in principle) no state has to hide nuclear weapons. The existing differences between the verification systems with regard to the production facilities of fissile materials

between Nuclear Weapon States and Non-Nuclear Weapon States, for instance, will disappear as a result. A panoply of verification mechanisms has to be worked out. On-site inspections, including challenge inspections 'anytime, anywhere', will definitely be part of it.

Nonetheless, a system that is 100 per cent watertight has still to be invented. But the international community has faced similar problems in the past. Intrusive verification systems are already in place between the US and Russia in the framework of the INF and START I nuclear disarmament agreements. The Convention on Chemical Weapons, opened for signature in January 1993, which has been ratified by 100 countries (of the 167 that signed it by September 1997), is even more relevant. The purpose of the Convention is to free the world of *chemical* weapons. It prohibits the development, production, possession, transport and use of chemical weapons. Even before the end of the negotiations President Bush made the following remark with regard to verification: 'We know that monitoring a total ban on chemical weapons will be a challenge. But the knowledge we've gained from our recent arms control experience, and our accelerated research in this area, makes me believe we can achieve the level of verification that gives us confidence to go forward for the ban.'⁸ The chemical industry world-wide also agreed with these far-reaching inspections, which in part it already undergoes for safety and environmental reasons.

Since chemical weapons are far easier to produce than nuclear weapons *mutatis mutandis* a similar verification system can be set up for nuclear weapons as well.

Concretely, the IAEA or a new international body should organize the inspections and report back to the Security Council of the United Nations.

Complementarily to these technical controls, some observers also favour societal verification, making it the duty of all citizens to report possible irregularities.⁹ The assumption behind this is the existence of a kind of loyalty to mankind. This cannot be taken for granted. Education both at home and at school is a key variable in fighting extreme nationalism. Evidently, citizens in non-democratic states face large obstacles in this regard.

3.1.2.3 Sanctions

Sanctions fulfil two essential functions: (1) to frighten potential offenders and (2) to punish those who actually violate the agreement.

Some observers propose to threaten with an 'international' nuclear counterattack (notwithstanding that its execution will require some time¹⁰). The idea originates from Jonathan Schell, who introduced the term 'weaponless deterrence' – nuclear deterrence *without* nuclear weapons – in his book *The Abolition*.¹¹

But the disadvantages associated with the threat of using nuclear weapons are not small: first, post-existential deterrence¹² may fail as well (just the same as existential deterrence); second, one would almost be obliged – for the sake of credibility – to actually carry out this threat (with all possible consequences); third, who is being punished most with a nuclear counterattack: the few decision-makers responsible for the break-out or the local population?; fourth, the characteristic of discrimination, since not all states will be able to produce (again) nuclear weapons.

With regard to the second function of sanctions, there has to be made a distinction between the detection of an irregularity during the stage of development and during the actual deployment of nuclear weapons. As long as the offender does not possess nuclear weapons at the moment of detection, the nuclear weapons programme can be preventively destroyed (like the Osiraq reactor in Iraq in 1981) and the offender can be subjected to strict international control similar to that of Iraq after the Gulf War. Conventional means are sufficient in this regard.

It goes without saying that there must be enough evidence before going ahead with preventive (conventional) attacks. It cannot be tolerated that this regime becomes an alibi to legitimize precision attacks against non-nuclear targets.

In the case of the offender already owning one or more nuclear weapons – this possibility is very small because of the intrusive verification regime – the same procedure could be followed, namely non-military sanctions and if necessary destruction and isolation. Even in this case, it would be completely illogical to use nuclear weapons in order to reconstruct an NFWF.

The Security Council – acting as the main political decision-making body of the UN – must be charged with enforcement and must decide whether or not to impose sanctions.¹³ Already today the possibility exists to request the Security Council to impose sanctions (military if need be) against proliferators. On 31 January 1992 a statement of the UN Security Council put it that the ‘spread of weapons of mass destruction poses a threat to international peace and security’ and therefore triggers Chapter 7 procedures of the UN Charter (included military means). To get round the veto in the Security Council there exists the possibility of calling in the UN General Assembly through the ‘Uniting for Peace’ procedure.

It is evident that non-military means like diplomatic pressure or economic sanctions should be tried out first. But if necessary, military means have to be used against violators. In this context, the Security Council might ask states or alliances (like NATO or the WEU) or other regional organizations to implement these military sanctions.

In the case of the international community being unable to agree on possible military actions, individual states might always consider proceeding with unilateral actions. Practically, the dominating world power – in this case the US – will have to take its responsibility in this regard.

All, however, should be done to prevent break-out, as the latter means the (temporary) end of the NFWF regime. This would not signify the end of the world. On the contrary, such a situation would still be much safer than a world with ten or more nuclear weapon states possessing hundreds of nuclear weapons. An NFWF would still be a better situation than the current one ‘because the rebuilding would take a considerable time, and in that time the dispute might be settled’.¹⁴ At worst, the world might end up with a few states possessing nuclear weapons – which corresponds to the current situation.

3.1.3 An NFWF: More than Desirable!

Establishing an NFWF carries with it some risks. But we have tried to argue that these are calculated risks. The dangers accompanying an NFWF are manageable. The

dangers related to a world with more Nuclear Weapon States are much more difficult to contain. To recapitulate, we will work on the key assumption that a *large-scale* nuclear war must be avoided at all costs. Such a conflict would mean the end of all life on earth. It goes without saying that the latter is in nobody's interest.

The possibility of such a massive nuclear war does exist only in a non-NFWF with hundreds of nuclear weapons such as today's. The necessary fissile materials to build this quantity of nuclear weapons will simply be not available in an NFWF.¹⁵

The risks for limited nuclear war, unauthorized use and nuclear accidents are also much smaller in an NFWF (even after break-out) than in a non-NFWF, especially if we take into account the risks related to nuclear proliferation. The risks of more wars being fought with conventional weapons in an NFWF is purely hypothetical and not verifiable. Even in the case that more violent conflicts will occur in an NFWF it can never be taken for granted that this is due to the elimination of nuclear weapons.

The risk of break-out on the other hand is real but small, and can be mitigated by verification and enforcement. The longer the NFWF regime exists, the stronger the moral taboo against (the rebuilding of) nuclear weapons.

In Search of Support From the beginning of the atomic age until now, many scientists, diplomats, politicians, (former) military and NGOs have called for the abolition of all nuclear weapons (see also Appendix I). In 1968 the NWS agreed with the juridically binding NPT, including the goal of nuclear disarmament (Article 6 – see Chapter 2).

The final statement of the First Special Session on Disarmament of the United Nations in 1978, attended by all UN members, was approved unanimously. It stated:

Mankind today is confronted with an unprecedented threat of self-extinction arising from the massive and competitive accumulation of the most destructive weapons ever produced. Existing arsenals of nuclear weapons alone are more than sufficient to destroy all life on earth . . . The increase in weapons, especially nuclear weapons, far from

helping to strengthen international security, on the contrary weakens it . . . This situation both reflects and aggravates international tensions, sharpens conflicts in various regions of the world, hinders the process of détente, exacerbates the differences between opposing military alliances, jeopardizes the security of all states, heightens the sense of insecurity among all states, including Non-Nuclear Weapon States, and increases the threat of nuclear war . . . Nuclear weapons pose the greatest danger to mankind and to the survival of civilization . . . The most effective guarantee against the danger of nuclear war and the use of nuclear weapons is nuclear disarmament and the *complete elimination of nuclear weapons*.¹⁶

On 6 July 1996 the International Court of Justice, in a remarkable case, spoke out against nuclear deterrence by declaring: 'the threat or use of nuclear weapons generally be contrary to the rules of international law.'

The most striking feature of the decision of the International Court of Justice with regard to the legality of the use and threat of use of nuclear weapons in July 1996 is without doubt that it recognized the obligation for the Nuclear Weapon States not only to start, but also '*to bring to a conclusion negotiations leading to nuclear disarmament in all its aspects under strict and effective international control*'. This text which has now assumed customary force is more progressive than Article 6 of NPT or even the action programme part of the compromise worked out at the 1995 NPT Extension Conference.

Former top politicians such as Ronald Reagan and Robert McNamara, top diplomats including George Kennan and physicists such as Albert Einstein, Joseph Rotblat and Andrei Sacharov already strove for an NFWF during the Cold War. Scientists united in Pugwash, Nobel Peace Prize Winner in 1995 (together with its founder Joseph Rotblat), and the International Physicians for the Prevention of Nuclear War, non-governmental organizations like Greenpeace, the International Peace Bureau, the Campaign for Nuclear Disarmament (CND) and Pax Christi International have made it their fight for many years.

Now that the Cold War has ended, more and more ex-

perts and politicians, progressive and conservative alike, are convinced that eventually a world without nuclear weapons is not only highly desirable but also achievable. Ralph Earle, as vice-director of the American Arms Control and Disarmament Agency (ACDA), said in May 1995: 'It is in our complete self-interest, as it is in the self-interest of the Russians and others, to reduce and eventually eliminate (all) nuclear weapons.'¹⁷

Since the 1995 NPT Extension Conference many remarkable initiatives have been taken in favour of the realization of an NFWF:

1. *The Canberra Commission on the Elimination of Nuclear Weapons* (an independent panel of 17 international government officials, scientists and military experts – amongst others Joseph Rotblat, Michel Rocard, Rolf Ekeus and Jayantha Dhanapala – established by the Australian government at the end of 1995¹⁸) (see Appendix I) reported its findings to the General Assembly of the UN in September 1996. Their statement is worth quoting at length:

The destructiveness of nuclear weapons is immense. Any use would be catastrophic.

Nuclear weapons pose an intolerable threat to all humanity and its habitat, yet tens of thousands remain in arsenals built up at an extraordinary time of deep antagonism. That time has passed, yet assertions of their utility continue.

These facts are obvious but their implications have been blurred. There is no doubt that, if the peoples of the world were more fully aware of the inherent danger of nuclear weapons and the consequences of their use, they would reject them, and not permit their continued possession or acquisition on their behalf by their governments, even for an alleged need of self-defense.

Nuclear weapons are held by a handful of states which insist that these weapons provide unique security benefits, and yet reserve uniquely to themselves the right to own them. This situation is highly discriminatory and thus unstable; it cannot be sustained. The possession of nuclear weapons by any state is a constant stimulus to other states to acquire them.

The world faces threats of nuclear proliferation and nuclear terrorism. These threats are growing. They must be removed.

For these reasons, a central reality is that nuclear weapons diminish the security of all states. Indeed, states which possess them become themselves targets of nuclear weapons.

The opportunity now exists, perhaps without precedent or recurrence, to make a new and clear choice to enable the world to conduct its affairs without nuclear weapons and in accordance with the principles of the Charter of the United Nations.

The members of the Canberra Commission call upon the US, Russia, the UK, France and China to give the lead to committing themselves, unequivocally, to the elimination of all nuclear weapons. Such a commitment would propel the process in the most direct and imaginative way. All other governments must join this commitment and contribute to its fulfillment.

The Commission has identified a series of steps which can be taken immediately and which would thereupon make the world safer.

The Commission has also described practical measures which can be taken to bring about the verifiable elimination of nuclear weapons and the full safeguarding of militarily usable nuclear material.

A nuclear weapon-free world can be secured and maintained through political commitment, and anchored in an enduring and binding legal framework.¹⁹

2. During the April 1997 NPT Prepcom Sweden, for instance, pointing to the proposals of the Canberra Commission, asked the NWS to deactivate their nuclear weapons.

The Steering Committee Project on Eliminating Weapons of Mass Destruction of the *Henry Stimson Center*, an independent panel of US former government officials, scientists and disarmament and military experts, amongst others Robert McNamara, Paul Nitze, Barry Blechman, John Steinbruner, General William Y. Smith (see Appendix I).²⁰

Their interim report, 'An Evolving US Nuclear Posture Review', finalized in December 1995, states:

... the US continued reliance on nuclear weapons undermines international efforts to persuade other countries not to acquire nuclear weapons – the only weapons that can utterly destroy the US as a nation and or society. Only a policy that aims at curbing global reliance on nuclear weapons – including our own – is likely to progressively eliminate nuclear dangers.

It mentions four distinct phases on the road towards abolition. The final report, 'An American Legacy. Building a Nuclear-Weapon-Free World', came out in March 1997.

3. A declaration in December 1996 of more than 60 retired generals and admirals of the US (among others John Galvin, Andrew Goodpaster, Lee Butler, Bernard Rogers, Charles Horner); the UK (Lord Carver, Hugh Beach); and Russia (Aleksandr Lebed, Boris Gromov) was in favour of the realization of an NFWF.

The former generals criticized the maintenance of nuclear deterrence in the post-Cold War period. The nuclear threats most commonly postulated to justify maintaining nuclear armaments 'are not susceptible to deterrence or are simply not credible'. They concluded: 'The end of the Cold War makes [an NFWF] possible. The dangers of proliferation, terrorism and a new nuclear arms race render [an NFWF] necessary' ... 'We believe the time for action is now, for the alternative of inaction could well carry a high price.'²¹

4. The Committee on International Security and Arms Control of the *US Academy of Sciences* in their report 'The Future of US Nuclear Weapons Policy' (June 1997) came to the same conclusions. The analysis of the Committee starts with the following observation: 'The basic structure of plans for using nuclear weapons appears largely unchanged from the situation during the Cold War, with both sides apparently continuing to emphasize early and large counterforce strikes and both remaining capable, despite reductions in numbers and alert levels, of rapidly bringing their nuclear forces to full readiness for use. As a result, the dangers of initiation of nuclear war by error (e.g. based on false warning of attack) or by accident (e.g. by a technical failure) remain unacceptably high.'²²

A Window of Opportunity The international community must be aware that we are in a very advantageous position to actually realize an NFWF.²³ The longer we wait, the longer the list of nuclear weapon states, and the more difficult it becomes to eliminate all nuclear weapons.

The arrival of a new state with nuclear weapons does not necessarily mean the end of the nuclear disarmament process. On the contrary, it would again point the international community to the urgency of nuclear disarmament. But the smaller the number of nuclear weapon states, the more easily an NFWF can be realized. The American vice-president Al Gore agrees with this: 'It is axiomatic that continuing progress in controlling and eliminating nuclear weapons will be easier if the number of countries possessing them is not expanding.'²⁴ A window of opportunity in the field of nuclear disarmament exists.

It must be acknowledged that an NFWF cannot be realized between one day and the next. A *gradual* approach is preferable, as long as substantial progress is made in the direction of an NFWF. In the last decade, both positive and negative signs can be distinguished from the point of view of nuclear disarmament.

Positive indications are: the bilateral US–Russian disarmament agreements (INF, START I and II); the principles and objectives defined at the 1995 NPT Extension Conference; the conclusions of the International Court of Justice with regard to the legality of the use and the threat of use of nuclear weapons; the near universal membership of NPT; South Africa, Belarus, Kazakhstan and Ukraine giving up their nuclear weapons; Brazil and Argentina eliminating their nuclear weapons programme; the African and South-East Asian NWFZ.

Negative indications are: the non-ratification of START II; no negotiations on cut-off of fissile materials; no fundamental modifications in the nuclear doctrines of the Nuclear Weapon States (for instance the refusal to adopt a no-first-use);²⁵ the lack of political will by the Nuclear Weapon States to start negotiations with regard to a Nuclear Weapon Convention; the development of upper-tier BMD systems in contravention of the ABM Treaty; the Chinese and French nuclear tests before the CTBT was signed; the Russian 'loose

nukes' and nuclear brain drain; the proliferating NPT states North Korea and Iraq; the nuclear rivalry between India and Pakistan; the French proposal for a '*dissuasion concertée*' and the German interest in it (see Epilogue).²⁶

Living with nuclear proliferation? The Nuclear Weapon States seem unimpressed by the arguments developed – and expressed more frequently by more and more experts – in favour of an NFWF. A US official commented on the above-mentioned declaration of the 60 retired generals by affirming the question of a journalist as to whether the administration planned to keep some of its nuclear weapons indefinitely with a simple 'yes'.²⁷

The UK and France did *not* mention an NFWF as the final objective, for instance, in their opening speech of the 1995 NPT extension conference.

The voting on the following paragraph of a resolution introduced by Malaysia in the UN General Assembly First Committee on Disarmament in November 1996 is very significant:

Calls upon all States to fulfill this obligation immediately by commencing multilateral negotiations in 1997 leading to an early conclusion of a Nuclear Weapons Convention prohibiting the development, production, testing, deployment, stockpiling, transfer, threat or use of nuclear weapons and providing for their elimination.

The 'obligation' points to the decision by the International Court of Justice in July 1996 urging all states to pursue and bring to a conclusion negotiations leading to nuclear disarmament.

The voting result on the quoted paragraph was the following: 87 in favour including China (as the only Nuclear Weapon State), New Zealand, South Africa and most of the so-called Non-Aligned countries; 27 states voted *against* including the US, the UK, France and Russia, but also most other EU (and NATO) states like Germany, Belgium, Luxembourg, the Netherlands, Portugal, Spain, Greece, Italy; other NATO states such as Canada and Turkey, and Eastern European states (which are possible future EU and/or NATO members); 27 states abstained including the EU states Austria,

Finland, Sweden and Ireland, together with Japan, Israel and Australia.²⁸

On 13 March 1997 the European Parliament also adopted a resolution in which it 'calls on the member states to support the commencement of negotiations in 1997 leading to the conclusion of a convention for the abolition of nuclear weapons'. But the NWS and its allies refuse to start up negotiations for an NWC . . .

3.2 NUCLEAR ADDICTION

Our analysis concludes that an NFWW is in the interests of both Non-Nuclear Weapon States and Nuclear Weapon States. More and more experts have the same opinion. Why, then, is it so difficult to convince the Nuclear Weapon States and their allies to give up their nuclear weapons?

At least three explanations might be considered: (1) the overall belief in nuclear deterrence; (2) prestige; (3) personal (and/or group) interests.

3.2.1 Belief in Nuclear Deterrence

The Nuclear Weapon States cling to their nuclear weapons because of their belief in the efficiency of nuclear deterrence. 'Nuclear deterrence works.' At least, the risks going along with nuclear deterrence do not outweigh the stabilizing effect of nuclear weapons, they argue. The advocates of nuclear deterrence do not '*believe*' that nuclear deterrence will fail. Richard Falk and Robert Lifton called this line of thinking 'nuclearism' or a 'psychological, political and military dependence on nuclear weapons, the embrace of the weapons as a solution to a wide variety of human dilemmas, most ironically that of "security"'.²⁹

What perspectives does that open for an NFWW? Joseph Rotblat stated it as follows when he received the Nobel Peace Prize in 1995: 'Unless there is a change in basic philosophy, we will not see a reduction of nuclear arsenals to zero for a very long time, if ever. The present basic *philosophy* is nuclear deterrence.'³⁰

If it is indeed a matter of belief, philosophy or paradigm,

change will be difficult, but not impossible. Why should a supporter of nuclear deterrence give up his ideas that he always has defended? The physicist Freeman Dyson in his book *Weapons and Hope* quotes Leo Tolstoi: 'I know that most men – not only those considered clever, but even those who really are clever and capable of understanding the most difficult scientific, mathematical or philosophic problems – can seldom discern even the simplest and most obvious truth if it be such as obliges them to admit the falsity of conclusions they have formed, perhaps with much difficulty – conclusions of which they are proud, which they have taught to others, and on which they have built their lives.'³¹

Since the end of the Cold War, a variant of this school turned up. These people admit that nuclear deterrence might fail (in the case of a rogue state, for instance), but argue that the probability of that is not very high (at the moment) and that the potential consequences are limited, especially if ballistic missile defences are available. They implicitly agree with those saying that nuclear deterrence does not work in theory, but they do not go as far as to relinquish the concept of nuclear deterrence.

These people probably will always find an(other) argument in favour of retaining nuclear weapons indefinitely. Previously, the former USSR was the main threat; now, the rogue states are the ones to deter. This kind of attitude resembles a kind of 'addiction' to nuclear weapons.

3.2.2 Prestige

Whether one believes in nuclear deterrence or not, nuclear weapons are perceived as an instrument of power in world politics. At the moment this applies especially to Russia (as the 'loser' of the Cold War) and, of course, to middle-range powers like France and the UK. A good example of this way of thinking is that of the French admiral Jacques Lanxade: 'The specific "characteristic" of France in the world is undoubtedly the fact that France has got an autonomous nuclear force. It cannot be denied that hereby it is given a status and a certain freedom of decision and action on the international level that cannot be achieved by the non-nuclear states.'³²

It is interesting to note that the logic of prestige not only applies to the elite of the Nuclear Weapon States, but also to the majority of their population. While most people in France did not agree with the resumption of the French nuclear tests during the summer of 1995, the majority of the people backed the government in her overall nuclear policy. The same applies even more to Israel, India and Pakistan. Nuclear weapons are pre-eminently 'the' symbol of national pride.

Education should therefore be high on the priority list of those striving for an NFWF.

3.2.3 Personal (or Group) Interests

It is clear that scientists, for instance, active in the research and development of nuclear weapons, do not like the idea of an NFWF. An NFWF puts their jobs and future at risk. The same applies to officials working for the government or for the military. Scott Sagan describes extremely well – from an American point of view but applicable to all NWS – the concept of 'the military-industrial complex'. 'The initial ideas for individual weapons innovations are often developed inside state laboratories, where scientists favour military innovation simply because it is technically exciting and keeps money and prestige flowing in to their laboratories. Such scientists are then able to find, or even create, sponsors in the professional military whose bureaucratic interests and specific military responsibilities lead them also to favour the particular weapons system. Finally, such a coalition builds broader political support within the executive or legislative branches . . .'³³ Is it not remarkable how many *retired* generals and admirals – people who know the costs and benefits of nuclear weapons very well – declare themselves in favour of an NFWF? Bureaucratic rigidity apparently obliges them to act against their personal beliefs during their career.

In term, democracies are supposed to overcome this obstacle.

A philosophical debate

In the end, and to make exemption of the last category (for the sake of democracy), one can only conclude that perpetual nuclear peace is only a matter of belief. The argument of prestige, for instance, does not apply to those who not *believe* in the efficiency of nuclear deterrence. Those critics do not perceive nuclear weapons as an instrument of 'power'. They perceive them more as a relic, militarily useless, and constituting a negative (instead of a positive) element with regard to the 'image' or 'identity' of a country. Even more, most of those observers probably do not start from the normative assumption that 'power' is or should be the central concept in (international) politics. Here, we end up in the midst of the philosophical debate between 'idealists' and 'realists' or, the modern and more fascinating variant, between 'constructivists' and 'neo-realists'.

Realists start from the following assumptions: first, that states are the primary actors in international politics; and second, that the pursuit of (especially military but also economic) power is the driving force of those states. Anarchy (in the sense of the non-existence of a world government) and the survival of the fittest are the result. Realists point to philosophers like Machiavelli and Hobbes. The latter wrote in *Leviathan*: 'The condition of Man is a condition of Warre of every one against every one.'³⁴

Nuclear weapons are perceived as military and political instruments of power. The consequences of such thinking in the nuclear field are immense. Neo-realist Kenneth Waltz wrote a famous article in which he even defended the idea of stimulating proliferation because of the stabilizing effect of nuclear deterrence.³⁵ The idea of an NFWF is therefore not taken at all seriously by (neo)realists.

Constructivists on the other hand agree (unlike idealists) that states are still the primary actors in world politics, but they argue (like idealists) that change is possible. Constructivists are in some sense more optimistic than (neo)realists. Alexander Wendt in his excellent article 'Anarchy is what states make of it' states that: 'self-help and power politics do not follow either logically or causally from anarchy and that if today we find ourselves in a self-help

world, this is due to process, not structure.³⁶ Our non-NFWF has been learned; as a consequence, it can be unlearned. 'If past interactions have created a structure in which status quo states are divided or naive, revisionists will prosper and the system will tend toward a Hobbesian world in which power and self-interest rule. In contrast, if past interactions have created a structure in which status quo states trust and identify with each other, predators are more likely to face collective security responses like the Gulf War. History matters. Security dilemmas are not acts of God: they are effects of practice.'³⁷ The Cold War was not the most confidence-building period. Now this period is over, the international community can establish a regime in which nuclear weapons are outlawed. Nuclear weapons *can* be disinvented.

3.3 TOWARDS AN NFWF

Experts are becoming more and more confident that the realization of an NFWF within a few decades is both desirable and achievable. For the concrete completion of this objective a lot more research is needed.

It is too simplistic an approach to prepare a detailed timetable towards an NFWF and ask the Nuclear Weapon States to sign it in the very short term. On the other hand, we cannot expect that the Nuclear Weapon States *will* systematically and progressively destroy their arsenals.

The challenge consists in a gradual but consistent and progressive disarmament effort towards abolition. From the current situation of more than 15 000 strategic nuclear weapons (and even more sub-strategic nuclear weapons) down to zero-level one can distinguish three stages: (1) a further marginalization of nuclear weapons, including the destruction of the majority of existing stocks together with an improved version of the current nonproliferation regime; (2) a quasi-NFWF; (3) an NFWF. This categorization has been set up primarily for cognitive reasons. Reality, of course, corresponds more to a continuum.

3.3.1 Stage One: the Further Marginalization of Nuclear Weapons

The first question that arises is the following: do we negotiate a Nuclear Weapons Convention first and implement the agreed steps later on, or vice versa, do we continue with a step-by-step approach and end up with a Nuclear Weapons Convention? A combination of a top-down and a bottom-up approach looks most promising. Further steps can and should be taken in order to strengthen the non-proliferation regime and to disarm gradually the nuclear arsenals. This reversal of the nuclear arms race will require a lot of time, money and energy. There is no question whatsoever of a nuclear peace dividend.³⁸ Nuclear arms control will be on the international agenda for years to come.

Relying only on a step-by-step approach is very risky from a disarmament point of view as the Nuclear Weapon States will dictate the speed of the disarmament process. Therefore, the five Nuclear Weapon States should make it clear from the beginning that they are willing to eliminate all nuclear weapons. Such a clear commitment on the highest political level is what is missing today and is of crucial importance in the short term. In concrete terms, this means starting up negotiations for a Nuclear Weapons Convention, preferably in the framework of the UN Conference on Disarmament. Such a Nuclear Weapons Convention should indicate the final steps towards an NFWF in a time-bound framework. There is no excuse for the Nuclear Weapon States to linger on in this regard. Or as Joseph Rotblat said: 'Entering into negotiations does not commit the parties. There is no reason why they should not begin now. If not now, when?'³⁹

The pressure from the Non-Nuclear Weapon States, especially the Non-Aligned Movement, will certainly grow in the years to come. Because of the discriminatory regime, the Non-Nuclear Weapon States will remind the Nuclear Weapon States of the principles and objectives as agreed during the 1995 NPT Extension Conference. A first indication is the resolution adopted at the UN General Assembly in December 1995 (106 to 39 with 17 abstentions) calling for the first time for the elimination of nuclear

weapons within a fixed time-period; and in the UN Conference on Disarmament (CD) in August 1996 28 states of the Non-Aligned Movement proposed an action programme for the elimination of nuclear weapons. Three phases were considered: (1) measures aimed at reducing the nuclear threat and measures of nuclear disarmament: 1996–2000; (2) measures to reduce the nuclear arsenals and to promote confidence between States: 2000–2010; (3) consolidation of an NWFV: 2010–2020.⁴⁰

During the 1995 NPT Extension Conference NGOs called for the negotiation and conclusion of a Nuclear Weapons Convention before the year 2000. This alliance of over 830 citizen groups on six continents now forms the '*Abolition 2000 Global Network to Eliminate Nuclear Weapons*'.

As long as there exists no Nuclear Weapons Convention, concrete steps can be taken to create a more constructive political climate for setting up and finishing the negotiations with regard to such a convention. The (almost) yearly Prepcoms in the framework of the five-yearly review conferences of the NPT can propose deadlines for one or more side aspects, analogous with the 1996 deadline agreed in the framework of the 1995 extension conference of the NPT on the realization of a Comprehensive Test-Ban Treaty (CTBT). It looks as if the so-called G-10 in the framework of NPT – namely Australia, Austria, Canada, Denmark, Finland, Hungary, Ireland, the Netherlands, Norway and Sweden – together with South Africa will provide for new impulses to further nuclear disarmament reductions.⁴¹

Concretely, as long as no Nuclear Weapons Convention exists the following steps can be taken during the first stage:

3.3.1.1 Ratification of the Comprehensive Test Ban Treaty (CTBT)

On 24 September 1996 the long expected Comprehensive Test Ban Treaty (CTBT) was opened for signature. The CTBT, which prohibits new nuclear tests, was the sole concrete disarmament measure which was discussed in the preamble of the NPT (1968) and the only step for which a firm date had been determined during the 1995 Review and Extension Conference.

Since 1945, about 2000 nuclear tests have been carried out of which 1030 by the US, 715 by Russia, 212 by France, 46 by China and 45 by the UK.

The Partial Test Ban Treaty signed in 1963 prohibits nuclear tests in the atmosphere, in outer space and under water. France and China signed as late as 1974 and 1980 respectively. The Threshold Treaty limiting the maximum yield – namely 150 kt – for carrying out nuclear tests came about in 1974.

In 1992 the US, the UK (which depends on the US test sites), Russia and France announced a moratorium on nuclear testing.

The negotiations for a CTBT in the framework of the UN Conference on Disarmament in Geneva started seriously only in 1994. This lingering on was also the main cause for failure of the (five-yearly) Review Conferences of the NPT in 1980 and 1990.

Paradoxically, the decision made by President Chirac in June 1995 to resume French nuclear testing, has hastened the negotiations for a CTBT. France finally agreed to a zero yield. The French and Chinese nuclear tests nevertheless had a negative influence on the entire nonproliferation regime as they legitimized nuclear weapons again.

Despite the conclusion of the treaty in September 1996, the prospects that the CTBT will *enter into force* look bleak. The treaty requires that all 44 countries possessing nuclear reactors ratify. One of these, India, however stated very clearly that it will never sign because of the overall discriminatory regime between Nuclear Weapon States and Non-Nuclear Weapon States and because of the lack of political will in the Nuclear Weapon States to reach an NFW. The Indian Minister of Foreign Affairs Kumar Gujral stated it as follows: 'The treaty in its current form only allows the five nuclear powers to sustain their nuclear hegemony. From a national perspective, the treaty will result in closing our option to have nuclear weapons. Whichever way you looked at it, we were left with no option but to resist the treaty.'⁴² The unstable internal political situation in India and the popularity of the Indian nuclear weapons programme are probably more accurate explanations of why India stood firm.

The impact of a CTBT is limited, as nuclear testing is not prerequisite to building a credible rudimentary nuclear arsenal. States such as Israel and Pakistan have never carried out a nuclear test, but either possess nuclear weapons or can produce them in a very short time. The type of bomb dropped on Hiroshima was untested, unlike that used at Nagasaki.

The merit of a CTBT lies in the fact that it will halt the qualitative nuclear arms race. The Nuclear Weapon States will no longer be able to develop completely new types of nuclear weapons. It also strengthens the whole nonproliferation regime and is one more step in the direction of an NWFW.

3.3.1.2 Halt the Production of Nuclear Weapons and Nuclear Fissile Material

*Halt the production of highly enriched uranium (HEU) and plutonium for 'military purposes' (the so-called cut-off)*⁴³ Procurement of plutonium or highly enriched uranium (HEU) – the necessary fissile materials for the production of nuclear weapons – is the most difficult hurdle on the way to a nuclear weapons arsenal.

The cessation of the production of plutonium and highly enriched uranium for military purposes thus, in principle, limits the *quantity* of nuclear weapons. However, the existing stocks of plutonium and HEU and the amount of nuclear fissile material released by nuclear disarmament and by civil nuclear reactors put the impact of a cut-off somewhat in perspective.

The negotiations on the cessation of the production of plutonium and HEU for military purposes still have to get under way (although preparations have been made in the framework of the UN Conference on Disarmament). One of the problems is that Pakistan demands that the *existing* stocks of nuclear fissile material are included in the negotiations as well. Others relate the issue to nuclear disarmament in general, which is not appreciated by the Nuclear Weapon States.

Highly Enriched Uranium (HEU) The Hiroshima bomb contained nearly 60 kg of HEU. The 'significant quantity' for the IAEA corresponds with 25 kg of HEU.

Up to now a total of 1750 tons of HEU have been used for military purposes.

The advantage of HEU – from a disarmament point of view – is its relatively easy conversion to low (less than 20 per cent) enriched uranium (LEU), which can only be used for nuclear weapons after a relatively complicated technical procedure of enrichment. LEU can be used as fuel for civilian nuclear reactors.

HEU is hardly ever used now in civilian power programmes. The US (unilaterally) stopped the production of HEU for weapons as long ago as 1964. The former USSR followed in 1989.

Plutonium According to the IAEA the ‘significant quantity’ of plutonium needed for the manufacturing of nuclear weapons is 8 kg. Unlike LEU, the existing 1160 tons of plutonium are in principle immediately usable for the manufacture of nuclear weapons and therefore pose a direct proliferation threat.

Plutonium, which is not a natural element, can only be derived by separation from spent (uranium) fuel. This relatively difficult procedure takes place in reprocessing plants. The world’s most important reprocessing plants are situated in La Hague (France) and Sellafield (UK). Belgium, the Netherlands, Switzerland, Germany and Japan have their spent fuel reprocessed in France or the UK. In all, 22 countries possess separated plutonium.⁴⁴

Since 1992 there has been a halt in the production of ‘military’ plutonium in the US,⁴⁵ and Russia has announced that no plutonium produced after October 1994 will be used in weapons and that production will cease in the year 2000. The UK and France halted the production of fissile material for use in nuclear weapons in 1995 and 1996 respectively. Moreover, in 1993 the US promised that it would place its excess of military plutonium under control of the IAEA.

Beside the already existing 260–270 tons of plutonium used for the manufacture of nuclear weapons (180 of which in the existing stocks of weapons), another 100–150 tons will be released by the year 2000 because of the dismantling of the existing nuclear arsenals.

The difference between plutonium for military and civilian use is far less relevant than the difference between separated (from the spent fuel) and non-separated plutonium. In other words, 'civilian' plutonium is perfectly usable for the production of nuclear weapons. More than fifty states have built nuclear reactors. For that reason, many experts state that the production of plutonium for *civilian* purposes should also be prohibited.⁴⁶

The (civilian) nuclear power reactors have produced some 910 tons of plutonium up to now of which 100 tons are still used in the reactors, 65 tons are stored, 37–40 tons are being processed by fast breeder reactors (which produce more plutonium than they consume) and 13 tons are being used in MOX reactors. The bulk however is stored in non-separated spent fuel. By the year 2010 another 400 tons of plutonium will arrive on the market.

In 1995, the US and Russia agreed that no new civilian nuclear fissile material will be used for weapons.

It is not at all clear what should be done with the remaining plutonium in the end. Two possibilities – both having advantages and disadvantages – exist: (1) storage of plutonium by vitrification which corresponds to immobilizing it in glass and storing it underground; (2) burning plutonium in MOX reactors. The latter option raises the following questions:⁴⁷

(1) Not all reactors are able to consume MOX fuel, which is a mixture of plutonium and uranium; (2) MOX fuel is more expensive than standard (uranium) fuel; (3) what about proliferation risks related to the transport of plutonium?; (4) finally, even MOX will yield toxic waste. Others point out that vitrification poses technical hurdles as well: it is not an irreversible process.⁴⁸ Russia seems likely to burn the remaining plutonium in MOX reactors.

The US government has decided to pursue both options – vitrification and MOX. The difference with the future US-MOX reactors in Europe however is that the spent fuel will not be reprocessed. Plutonium, in other words, will not be separated in order to bolster the non-proliferation regime. Prohibition of the production of tritium⁴⁹ too should be considered.

A 'cut-off' should be followed by:

(1) Declaring publicly the numbers of the existing stocks of nuclear weapons, the quantities of nuclear fissile material for civilian use and the facilities where nuclear weapons are being produced. Germany proposed the introduction of a Nuclear Weapon Register in 1993 but this proposal has been rejected by the Nuclear Weapon States.⁵⁰

(2) A moratorium on the development and production of nuclear weapons, and the closure of the existing production units of nuclear materials.

(3) International control (for example by the IAEA) of the declarations concerning both the stocks of nuclear fuel and the cessation of the production of nuclear weapons. Thousands of facilities will have to be checked.⁵¹

An alternative is the storage of all nuclear fissile material by an international organization as proposed by the unsuccessful Acheson-Lilienthal and Baruch plans, both of 1946. This could also be regarded as a final step before reaching an NFWF.

Last but not least, some experts propose a ban on ballistic missiles for military purposes.⁵² A positive side-effect of such a ban would be the diminished need for the costly BMD systems.

3.3.1.3 Nuclear Disarmament

The most crucial disarmament step is *the start of negotiations with regard to a Nuclear Weapons Convention* as soon as possible. The objective of such a Nuclear Weapons Convention is to write down in detail the steps which have to be taken to reach an NFWF. To be clear, a Nuclear Weapons Convention does not mean the realization of an NFWF in the very short term. However, a time-bound framework should elaborate steps for this final goal. Once a Nuclear Weapons Convention exists – say in the year 2000 – another 15–20 years should be seen as needed to get rid of the remaining nuclear weapons and create the climate to convince all states to adhere to it.

The right to withdraw from the treaty should be excluded. If one state were to withdraw this would by definition mean the end (at least temporarily) of the NFWF regime.

As long as negotiations with regard to a Nuclear Weapons Convention have not been set up and agreed upon, the following disarmament steps can be taken (in chronological order): START II ratification, START III, post-START III.

START II (signed in 1993) was ratified by the American Congress in January 1996. It is expected that Russia will follow. Yet, some hurdles remain for the Duma. First, the imbalance of the treaty, as Russia has to *build* 500 new single-warhead ICBMs in order to fill the future gap with the US. Alexei Arbatov, Deputy Chairman of the Defence Committee of the Russian Duma, explains the negative results of the START II negotiations for Russia as follows: 'In their haste to gain considerable economic aid from the United States and begin negotiations for a "strategic alliance", Russian policymakers failed to acknowledge the disadvantages forced upon them by START II.'⁵³ During the March 1997 Helsinki Summit both countries agreed to extend the implementation deadline from 2003 to 2007 (when these systems are supposed to be outdated anyhow). The latter makes it easier for the Russian Duma to satisfy START II. Second, the negotiations with regard to defining which BMD systems are allowed under the ABM Treaty; and third, the extension of NATO to the east.

Ideally a protocol was to be added which also provides for the destruction of dismantled missiles and nuclear warheads (since this is not the case in the existing START treaties, except for the Russian SS-18 missiles).

A new bilateral stage of negotiations presents itself, since the ceilings agreed on by START II (being 3000–3500 strategic nuclear arms on both sides), are still very high. These bilateral negotiations will not proceed until START II has been ratified by Russia. Lower levels of disarmament (taking away the imbalance in START II) might make it easier for Russia to agree on START II. During The Helsinki Summit in 1997 a framework agreement was signed in which START III levels were set at 2000–2500 warheads.

Negotiations with the other Nuclear Weapon States At the latest when the former superpowers have reached a level comparable to that of France (560), the UK (300) and China (300–400), those countries must be included in further

negotiations. The objective is then to attain relatively quickly a low level of strategic nuclear weapons, say 50–75 nuclear weapons per Nuclear Weapon State. If these weapons are sufficiently dispersed and made as invulnerable as possible, this number will still suffice for a credible second strike.

3.3.1.4 New Nuclear Doctrines: From Weapons of Last Resort to a No First Use

Lower Alert-Rates The so-called hair-trigger alert-rates of the Cold War are still in place, except with respect to the bombers. This boils down to a nearly automatic (launch-on-warning) response in the case of a nuclear attack. There is an urgent need for lower alert-rates on ICBMs and SLBMs. This would sharply reduce the possibility of unauthorized use and hardly affect the nuclear deterrence doctrine itself.

Deactivating

New doctrines are hardly credible when no practical consequences result from them. Deactivating, for instance, is a concrete step which consists of storing the nuclear warheads separately from their delivery vehicles, which increases the timespan needed to effectively launch nuclear weapons. This zero-alert sensitively reduces the possibility of accidents and creates more time to confer during crises.⁵⁴ The storage of the warheads of the land-based missiles and submarines can be subjected to international controls. Michael Mazarr expects that France, the UK and Russia will be the least interested in this concept of virtual nuclear deterrence.⁵⁵

Nuclear Deterrence Against Nuclear Weapons A further step would be limiting nuclear deterrence to attacks with nuclear weapons instead of the current situation in which nuclear weapons have to deter attacks with conventional, CBW and nuclear weapons. In practice, this might result in the dismantlement of all tactical or sub-strategic nuclear weapons.

No First Use As opposed to the current doctrines which enable the Nuclear Weapon States to use nuclear weapons before others do and which enable the Nuclear Weapon

States to respond to a conventional, chemical or biological attack with nuclear weapons, more and more experts believe that the Nuclear Weapon States should adopt a so-called no-first-use strategy as soon as possible.⁵⁶

In that event the Nuclear Weapon States would promise *never* to launch nuclear weapons first. Nuclear weapons will be used only in response to the use of nuclear weapons by another nuclear weapon state. This would not only serve the credibility of the nuclear strategy, it would also correspond to the idea of negative security guarantees, namely the promise of the Nuclear Weapon States never to attack a Non-Nuclear Weapon State with nuclear weapons. At this moment only China is prepared to promise this unconditionally. A no-first-use doctrine also excludes nuclear war-fighting options. In sum, a no-first-use doctrine would be one of the most important steps to achieving an NFWF in term. It should be legitimized by a treaty.

In 1987 Norway (which is a member of NATO) already stated that 'the Government will emphasize that Norway should contribute actively to the efforts enabling NATO to move away from a strategy based on possible first-use. The question of how to move away from the "first use option" must . . . be seen in connection with efforts to reduce the dependence of nuclear weapons in general within the NATO strategy'.⁵⁷

The US Nuclear Posture Review of 1994 considered the option of a no first use as well, but finally did not adopt it. Huge internal and external pressure prevented it from being adopted.

A no first use of mass destruction weapons⁵⁸ maintaining the possibility of reacting with nuclear weapons in response to a CBW attack, does not go far enough (see Chapter 2).

3.3.1.5 Reinforcement of the Current Nonproliferation Regime

It goes without saying that during the transition period nonproliferation of nuclear weapons must remain a fundamental objective, since any additional nuclear weapon state would proportionally render the realization of an NFWF more difficult. More competences and additional means for the IAEA are appropriate here. The Cooperative Threat

Reduction Programme with Russia should be strengthened. The treaties on the prohibition of chemical and biological weapons must also be strictly complied with. Finally, the spread of conventional weapons should be controlled more strictly as well.

3.3.2 Second Stage: a Quasi-NWFW⁵⁹

Once the Nuclear Weapon States have 50–75 nuclear weapons left, of which the warheads are being stored separately, a long enough period of time must be incorporated to give the regime the possibility to mature and the Nuclear Weapon States to get (psychologically) used to the idea of a security policy *without* nuclear weapons.

An alternative might be the storage of the last dozens of nuclear weapons by an international organization.⁶⁰ The costs of this option, however, would appear larger than the benefits.⁶¹

3.3.3 Third Stage: an NWFW

Actually achieving an NWFW would be a confidence-building measure of extreme significance by and for the international community. Maintaining the non-nuclear regime to be, will require enormous financial resources but they pale compared to the costs of the manufacture and maintenance – let alone the use – of these inhumane ‘weapons’.

An NWFW would make the world safer in the end. Such a regime would free time, money and energy for more everyday, but no less important accomplishments.

Conclusion

Almost everybody agrees that the process of nuclear disarmament should continue. The question which is much more controversial is whether the process of nuclear disarmament ultimately includes an NFWF. In this study we have tried to demonstrate that an NFWF, under specific conditions, is the least dangerous option in the long term, both from the point of view of every single human being and from that of each state. Two arguments are central to this debate: the enormous 'costs' of nuclear deterrence in general, and the threat of nuclear proliferation in particular.

In Chapter 1, we tried to point out that many – too many – risks accompany nuclear weapons. The possibility that nuclear deterrence will actually fail is small indeed. After all, the majority of the decision-makers act rationally. The risk of a nuclear counterattack is simply too great a risk for them. Nevertheless, the possibility that nuclear deterrence will fail can never be excluded. Here we refer to 'irrational' decision-makers who are either psychologically disturbed or under the excessive influence of alcohol, drugs and/or medication; to decision-makers who are willing to risk their own lives and those of others for ideological or religious reasons; or who despite the possible dangers simply dare to risk an attack, or to a combination of these factors.

The fact that in most cases more than one individual is empowered to launch nuclear weapons reduces the possibility of unauthorized use or miscalculation but this is no guarantee. Here the danger of groupthink and the risks inherent in decision-making processes within an organization have been demonstrated.

Risk-takers may test the paradox of nuclear deterrence. For them, the credibility of the nuclear strategy is of importance. Most experts agree that nuclear deterrence to prevent a conventional or CBW attack is less credible than nuclear deterrence *vis-à-vis* nuclear weapons. But even in

the latter case the chance exists that nuclear deterrence will fail. Besides the risk of escalation from the conventional to the nuclear level, one cannot escape from the fear of a first strike. Distrust among nuclear opponents is inherent.

The only valid conclusion is that the chance that nuclear deterrence might fail always existed, still exists, and will always exist as long as the Nuclear Weapon States (and their allies) rely on nuclear deterrence. The longer one relies on nuclear deterrence, the greater the chance that individuals belonging to one of the categories mentioned above might decide to use nuclear weapons. Since nuclear deterrence cannot work in theory, it may well go wrong in practice some time in the future. Nuclear deterrence may have a stabilizing effect in practice, but it is an illusion to believe that nuclear deterrence will always work. Or as McNamara puts it: 'It can be confidently predicted that the combination of human fallibility and nuclear arms will inevitably lead to nuclear destruction.'

Failure of nuclear deterrence signifies either launching nuclear weapons (with all possible consequences) or not using them but further undermining the nuclear doctrine, a practice which, in turn, may lead to a greater likelihood of using them in term.

Second, nuclear kamikaze by terrorists is by definition not deterable by nuclear weapons. Third, the risk of a nuclear accident can never be excluded.

Working on the assumption that nuclear weapons should never be used (again) because of their destructive capacity and that nuclear deterrence will not always work, we conclude that nuclear weapons need to be further delegitimized. Doctrines based upon nuclear deterrence should gradually disappear in the future.

An NFW is also one of the most important objectives of the Nuclear Nonproliferation Treaty (NPT). The document 'Principles and Objectives for Nuclear Nonproliferation and Disarmament' which was adopted at the 1995 NPT Extension Conference, is even more specific: 'The determined pursuit by the Nuclear Weapon States of systematic and progressive efforts to reduce nuclear weapons globally, *with the ultimate goal of eliminating those weapons, . . .*'

Moreover, the geopolitical situation has totally changed

since 1989. The bipolar world system does not exist any more. Regarding the future, it is the danger of the further spread of weapons of mass destruction that is most alarming. This has been analysed in Chapter 2. A growing number of states with nuclear weapons implies an increasing chance that nuclear weapons will be used. The chance of nuclear weapons being used grows even more than proportionally because of the structural characteristics inherent to proliferators. The chance of accidents, for instance, is disturbingly greater in such states because they lack sophisticated security measures. 'Rogue states' might simply not be deterable, even the former US Secretary of Defense William Perry agrees.

The current nonproliferation regime is certainly not able to halt the further spread of nuclear weapons. Iraq and North Korea – two member states of the NPT – demonstrated this once again in the beginning of the nineties. Even additional measures (such as a reinforcement of the competences of the IAEA, the tightening of the export-control regimes) are only restraining factors. A state that has enough time, energy and financial means to acquire nuclear weapons will undoubtedly succeed in the short, medium or long term. Eliminating proliferators preventively only has a short-term effect and undermines the existing nonproliferation regime.

The international society of states has the choice between (a) a world with more states possessing nuclear weapons in the long run, and (b) an NFWF. The prevention of nuclear proliferation is easiest in an NFWF. States in such a regime have nothing to hide and therefore have no reason to refuse intrusive inspections. As a consequence, an NFWF is in the interest of all states, including the Nuclear Weapon States. This has been elaborated in Chapter 3.

Two additional conditions must be attached to an NFWF: (1) universality; and (2) sanctions in case of non-compliance. An NFWF is by definition a regime in which *every* state participates. The disadvantages for the 'risk-taker' (from isolation to a nuclear counterattack) never weigh up against the possible benefits of a 'break-out' in the short term. In addition, the Nuclear Weapon States will always hold the possibility of reproducing nuclear weapons.

It is clear that a step-by-step approach towards an NFWF is preferable. This does not mean that biding time is opportune. On the contrary, since the end of the Cold War a 'window of opportunity' exists which should be exploited to realize an NFWF. Three stages have to be distinguished.

During the first stage, a clear commitment by the Nuclear Weapon States to realize an NFWF is of utmost importance. Concretely, negotiations leading to a Nuclear Weapons Convention should be set up as soon as possible. These negotiations should be finalized in the medium-term – say before the year 2000 – and should include a detailed time-bound framework and the necessary conditions to reach an NFWF.

In the meantime, the entry into force of the CTBT and the start of the negotiations on a 'cut-off' with regard to the production of plutonium and highly enriched uranium for military purposes should be a priority. The development and production of nuclear weapons should be ceased; a detailed inventory of all stocks of nuclear warheads and nuclear fissile material should be made; and the process of nuclear disarmament should be continued. The latter implies that at a specific moment France, the UK and China together with the US and Russia, should be involved in nuclear disarmament negotiations.

The second stage serves to create a mature psychological climate which would make it possible to take the definitive step towards an NFWF. Important in this regard is that the political and military use of nuclear weapons would be seen by all states as completely illegitimate. Consequently, a nuclear weapon free world could be realized, perhaps earlier than is commonly expected.

Epilogue: The Possible 'Europeanization' of the French (and British?) Nuclear Weapons

The combination of the process of nuclear disarmament and the process of European integration might lead to a new nuclear debate in Europe comparable with the Euro-missile debate at the beginning of the eighties. The question is: what about the French (and maybe British) nuclear weapons in the case that foreign and security policy (including defence) will become mainly the domain of 'Europe' as the Treaty of Maastricht (1991) implies?

We assume that the decision *to use* nuclear weapons will always remain French (or British), except in a federal Europe, which is not a realistic project in the foreseeable future. But France and (maybe) the UK might explicitly extend their nuclear umbrella over (a part of) Europe. In return, the concerned European governments might discuss this nuclear policy in a similar way as now occurs in the Nuclear Planning Group within NATO with respect to the American nuclear weapons.¹ By our definition, this constitutes a kind of 'Europeanization' of the French, and maybe British, nuclear weapons. It also corresponds to the French proposal of *dissuasion concertée* which was introduced (again) during the Summer of 1995 and not only to calm down the sharp and unexpected reactions from most European governments (except the UK and Germany) against the resumption of the French nuclear tests.² The French Prime Minister Alain Juppé clarified in September 1995: 'necessitating a dialogue between equal partners, on a subject which concerns their common future' . . . 'In a world where nuclear weapons will continue to play a necessary role, even if only because of the already existing arsenals, this engagement [that Germany will remain non-nuclear] makes

the need to guarantee German security even more important.³ In January 1997 a secret defence pact between France and Germany, closed in Nuremberg on 9 December 1996, became public by which Germany for the first time agrees to talk about 'the role of nuclear deterrence in the context of a European defence policy'.⁴

All this is clearly in the interests of France. The French will not lose their sovereign right with regard to the use of nuclear weapons (and therefore strengthen their position in the EU). At the same time, by bringing their nuclear weapons under a European framework, the long-term existence of their nuclear arsenal is much better guaranteed. The other European governments might even have to contribute financially for this nuclear umbrella.

This step however will have serious consequences for the overall nuclear disarmament and non-proliferation regime. To extend explicitly the French nuclear umbrella and to discuss nuclear policy in at least the core area of the European Union will give a totally wrong political signal to states in the rest of the world which also think of procuring nuclear weapons.⁵ This move will rightly be perceived as giving the 'Europeans' like the Americans, Russians and Chinese their own nuclear weapon arsenal 'for securing their own vital interests'. This will stimulate at least indirectly the further spread of nuclear weapons and will bring to the fore the high degree of inconsistency of the current nuclear policy of the Nuclear Weapon States (ignoring the link between proliferation and disarmament).

Furthermore, public opinion in Non-Nuclear Weapon States like Germany, Belgium and the Netherlands which is opposed to nuclear weapons might shift, gradually accepting nuclear arsenals (as nowadays in the current Nuclear Weapon States). Taking also into account that European modern conventional weapons (as alternatives for nuclear weapons) are less advanced than the American ones, the European governments supported by their public opinion will cling to nuclear weapons as long as possible, braking the current trend of nuclear disarmament.

In addition, such a Europeanization would be contrary to both the spirit and the letter of the NPT. Even the UK is very clear about this. A Counsellor of the UK Permanent

Representation to the EU, stated: 'The Non-Proliferation Treaty (Article I) prohibits nuclear-weapon States Parties from transferring to any recipient whatsoever nuclear weapons, or the control over them (unless the nuclear weapon states were to cease to exist).' He continued: 'The establishment of a European nuclear force would therefore entail a breach of the Non-Proliferation Treaty.'⁶

On the other hand, France and the UK established a permanent nuclear cooperation council in 1992.

Last but not least, what is the use of replacing the American nuclear umbrella with a French one? The French argue that the American umbrella is no longer very credible. While that may be true, the Europeanization will stimulate the removal of the American nuclear weapons (and possibly conventional ones too) out of Europe. Apart from France, in whose interest would this withdrawal be? The British Minister of Defence Malcolm Rifkind already said in 1992: 'It is not in our interests to encourage any tendency towards thinking that there could be a major conflict in Europe in which the question of nuclear use arose which did not involve the vital interests of all the allies including the US.'⁷ The conflict in the former Yugoslavia showed again how much the Europeans need the US. The Europeanization of the French (and maybe British) nuclear weapons will not alter this kind of dependency with regard to military interventions at all.

I am not defending the American nuclear weapons in Europe. My point is that the replacement of the American nuclear umbrella by a European one might endanger the process towards an NFWF much more than the status quo.

To conclude, there is no need for the other European states to discuss the French doctrine of nuclear deterrence. The Non-Nuclear Weapon States of the EU need and can instead put pressure on the Nuclear Weapon States (read France and the UK) to implement their commitments in the framework of the NPT, being 'the determined pursuit by the Nuclear Weapon States of systematic and progressive efforts to reduce nuclear weapons globally, with the ultimate goal of eliminating those weapons, . . .'.

'Europeanization' in practice

Two practical scenarios of 'Europeanization' can be traced. First, the long-term project of a united Europe initiated by Jean Monnet and Robert Schumann might one day become reality. At that time, a united Europe has to deal with the existing nuclear weapons in the region. Even critics cannot deny that there is a gradual evolution towards more European integration. The next jump forwards will be the introduction of the 'Euro' currency in 1999. Despite fundamental objections by well-known economists,⁸ political commitment at the highest level in the respective European governments makes it very probable that Economic and Monetary Union (EMU) will become reality.

The EMU in its turn will entail more *political* integration, if only for democratic reasons. In addition, Germany will only give up its stable currency if more political power – especially in the field of foreign policy – is the result. A European Political Union will be established of which France and Germany together with the Benelux will constitute the core. The question which then comes up is: what will these governments decide about the French proposal for 'concerted deterrence'?

Second, France might *discuss* its nuclear policy with its neighbours in the context of the EU, the West European Union (WEU) and/or NATO. This second practical scenario of 'Europeanization' might already become real in the very short term.

Germany already made clear that it is willing to discuss the role of nuclear weapons in the European framework. The French-German agreement of 9 December 1996 points to the fundamental role of the American nuclear weapons but mentions also the French and British nuclear weapons contributing to overall deterrence.

At the present time the EU does not deal with nuclear deterrence. But the Treaty of Maastricht (1991) aims to establish a 'Common Foreign and Security Policy' eventually including defence issues. The 'Draft report on a security and defence policy for the EU' of the Committee on Foreign Affairs, Security and Defence Policy of the European Parliament (June 1996) – the so-called Tindemans report – included the remarkable following paragraph:

[The Committee] believes that France and the UK, which have special responsibility in the area of European security by virtue of their status as nuclear powers and permanent members of the UN Security Council, should envisage, ultimately, deploying their nuclear forces for the protection of the EU and look into the possibility of organizing coordinated patrols by their missile-launching submarines in the very near future.⁹

In an extraordinary move, the draft report has been rewritten and the second part of the quoted text has been deleted. In the meantime, another EP resolution firmly rejects a 'European' nuclear arsenal. Nevertheless, the Tindemans report is an indication that even within the European Parliament at least a large minority is in favour of 'European' nuclear weapons.¹⁰

The French and British nuclear weapons are not mentioned in any treaty of the EU (yet). By integrating the WEU – which stressed the importance of the French and British nuclear weapons again during the WEU Summit in Madrid in November 1995¹⁰ – into the European Union (which was one of the options discussed at the Intergovernmental Conference of the EU in 1996–7), the French and British nuclear weapons will be *recognized* for the first time as such within the European Union. In our definition, this would constitute a kind of 'Europeanization'. Although the UK is still not willing to discuss WEU integration in the EU, Prime Minister Tony Blair would not have excluded this possibility in the future, during the EU Amsterdam Summit in June 1997.¹¹ But even if the WEU will not be integrated as a whole into the EU in the short term, there has to be made a decision with regard to the future of the WEU at the latest in 1998 when the Treaty of Brussels (1948) expires.

The French might also discuss their nuclear policy in *NATO* in the future. In December 1995, France made a U-turn and decided to reintegrate in the military structures of the Atlantic Alliance (after being absent since 1968). But up to now (January 1998), they have refused to talk about nuclear issues in the NPG. If France also gives up this reticence, then a kind of de facto European NPG might

see the daylight as part of the European Security and Defence Identity within NATO. Again, such a 'Europeanization' would legitimize nuclear weapons in a period in which the US and Russia are dismantling their nuclear arsenals and in which the international community perceives the proliferation of nuclear weapons as one of the gravest potential threats.

As long as the member states of the international organizations (EU, WEU, NATO) do not agree on debating the French nuclear deterrence policy, France can and will discuss it on a *bilateral* level. France already established a Joint Nuclear Weapons Commission with the UK in October 1992. One of the items discussed is the concept and practice of nuclear deterrence. Germany is also willing to discuss the nuclear issue. Long before the Franco-German defence pact of December 1996, the French stated: 'It is not necessary for the radius of action of France's deterrence to be declaratively extended to the territory of the FRG to apply there de facto, according to the concept of "vital interests".'¹²

The idea of 'Europeanization' is not popular in EU countries like Sweden, Ireland, Austria, Finland and Denmark. But as these countries will probably not be part of the European inner core, their obstruction is not so relevant with regard to the feasibility of the whole project. The UK is also against because it will undermine its sovereignty. Public opinion in Germany and the Benelux has never liked the idea of nuclear deterrence either. Nevertheless, some influential German and Belgian conservative politicians flirt with the idea of a 'European' nuclear weapon as well.¹³ For instance Friedbert Pflüger, disarmament policy spokesman of the German Christian-Democrat CDU/CSU Parliamentary Group, put forward: 'A second, small but effective shield could also be erected – in the form of French (and British) atomic weapons with a European function.'¹⁴ The German interest in the French nuclear umbrella made explicit in the French-German agreement of December 1996 does not therefore come as a surprise. But it makes this step no less significant. This is a huge move forward towards the Europeanization of the French nuclear weapons.

Whether in the short or the medium term, the debate about 'Europeanization' has to take place. If not, it is very

likely that the French nuclear weapons will in some way or another find their way to the European level. Public opinion will not be consulted, and might endorse it *a posteriori* for reasons of prestige. The negative 'side-effect' is that the global nonproliferation and disarmament regime might be jeopardized even further.

Appendix I:

List of Quotations in Favour of an NFWF

- **Les Aspin** (as member of the US Congress before he became Secretary of Defense):

'A world without nuclear weapons would not be disadvantageous to the US. In fact, a world without nuclear weapons would actually be better. Nuclear weapons are the big equalizer but now the US is not the equalizer anymore but the equalizee.'

- **Andrei Kozyrev** (former Minister of Foreign Affairs of Russia during the 1995 NPT Review and Extension Conference, 24 April 1995):

'Russia is committed to the final goal of complete elimination of nuclear arms . . . I would like to underline that the indefinite extension of the NPT is not a mandate for an indefinite possession by the nuclear powers of their nuclear arsenals. It is a perspective of a progressive movement toward a world free of nuclear weapons.'

- **Thomas McNamara** (US Assistant Secretary of State for Politico-Military Affairs, 8 March 1995):

'[It is in the] fundamental interest of all powers that wish to see nuclear weapons reduced and eliminated . . . We are in the process of getting rid of nuclear weapons.'

- **Sha Zhukang** (Chinese Ambassador for Disarmament during the 1995 NPT Review and Extension Conference, 11 May 1995):

'[The 1995 NPT Conference] marks a new beginning: it is a call for redoubled efforts to realize the objectives of the NPT, in all of its aspects, with the goal of the complete prohibition and the entire destruction of nuclear weapons.'

- **Boutros Boutros-Ghali** (UN Secretary-General during the 1995 NPT Review and Extension Conference, 17 April 1995):

'The most safe, sure and swift way to deal with the threat of nuclear arms is to do away with them in every regard . . . Reduction and destruction of all nuclear weapons and the means to make them should be humanity's greatest concern.'

- **UN General Assembly** Resolution of 12 December 1995:

'to commence negotiations early in 1996 on a phased program of nuclear disarmament and for the eventual elimination of nuclear weapons in a time-bound framework.'

- **Melvin Laird** (former US Secretary of Defense under Nixon, in the *Washington Post*, 12 April 1992):
'A worldwide zero nuclear option with adequate verification should now be our goal . . . These weapons are useless for military purposes.'
- **McGeorge Bundy** (former NSC adviser of Kennedy), **William Crowe** (former Head of the JCS), and **Sidney Drell** (physicist) in their article 'Reducing Nuclear Danger', *Foreign Affairs* (1993):
'From the beginning of the Cold War in 1946 to its end in 1990, the US government would have rejected any offer from the gods to take all nuclear weapons off the table of international affairs. Today such an offer would deserve instant acceptance.'
- **US President Clinton** and **Indian Prime Minister Rao**, in May 1994:
' . . . strong support for the progressive destruction of weapons of mass destruction with the goal of elimination of such weapons.'
- **US President Reagan** (during the Reykjavik Summit in 1986):
'To look down an endless future with both of us sitting here with these horrible missiles aimed at each other, and the only way of preventing a holocaust is just so long as no one pulls this trigger, this is unthinkable.'
- **WEU Assembly Document 1420** (May 1994):
'There is the feeling; . . . , that the United States is feeling uneasy with nuclear weapons and that in fact it would prefer to eliminate them altogether.'
- **Judge Christopher G. Weeramantry** of the International Court of Justice (8 July 1996):
'It would be a paradox if international law, a system intended to promote peace and order, should have a place within it for an entity that can cause total destruction of the world system, the millennia of civilization which have been produced it, and humanity itself.'
- **Henry Stimson Center Project 'An Evolving US Nuclear Posture Review'** (December 1995):
'the continuing dangers of nuclear use justify every effort to progressively eliminate nuclear weapons, or at least to move the world as close to that objective as feasible.'

The Members of the Steering Committee of this Henry Stimson Project¹ are:

- **General Andrew Goodpaster** (former Supreme Allied Commander of Europe (SACEUR), co-chair of the Atlantic Council)
- **Howard Berman** (Congress, Democrat)
- **Barry Blechman** (Chairman of the Henry Stimson Center):

'the gradual elimination of all such weapons from all countries – including America – should be the US objective' ('Phase out the bomb', *Foreign Policy*, Winter 1994–95).

- **General William Burns** (Former US Joint Chiefs Representative for INF)
- **General Charles Horner** (US Commander, Air Force Space Command):
'The nuclear weapon is obsolete. I want to get rid of them all. I want to go to zero' (in: San Francisco Chronicle, 16 July 1994)
- **James Jeffords** (Senator, Republican)
- **Michael Krepon** (President of the H. Stimson Center)
- **Robert McNamara** (former US Secretary of Defense under Kennedy and Johnson):

'... General Goodpaster and I strongly advocate a return, by all five nuclear powers, insofar as practicable, to a non-nuclear world. If we dare break out of the mindset that has guided the nuclear strategy of the nuclear powers for over four decades, I believe we can indeed 'put the genie back in the bottle'. If we do not, there is a substantial risk that the 21st century will witness a nuclear holocaust' ('A long-range policy for nuclear forces of the nuclear powers', quoted in *Pugwash Newsletter*, October 1994/January 1995)

- **Will Marshall** (President, Progressive Policy Institute)
- **Ambassador Paul Nitze** (Former US Chief Arms Control Negotiator):

'The idea that the future peace and well-being of the world should rest upon the threat of the nuclear annihilation of large numbers of non-combatants is unacceptable' ('Is it time to junk our nukes?', *The Washington Post*, 16 January 1994, pp. C1–C2)

- **Janne Nolan** (Senior Fellow, The Brookings Institution)
- **Philip Odeen** (President, BDM International)
- **Ambassador Rozanne Ridgway** (former US Assistant Secretary of State)
- **Scott Sagan** (Professor, Stanford University)
- **General W. Smith** (former US deputy commander-in-chief, European Command)
- **John Steinbruner** (Director Foreign Policy Studies Program, The Brookings Institution)
- **Victor Utgoff** (deputy director Strategy, Forces, Resource Division of the Institute for Defense Analyses)

— *Canberra Commission on the Elimination of Nuclear Weapons* (1996), with the following commissioners:

- **Celso Amorim** (Brazilian Foreign Minister, 1993–4)
- **General Lee Butler** (Former Commander-in-Chief of the US Strategic Air Command, 1991–2 and the US Strategic Command, 1992–4)
- **Richard Butler** (Australian Ambassador to UN)

'I firmly believe that practical and realistic steps, such as those set forth by the Stimson Center Study, or by the Canberra Commission on the Elimination of Nuclear Weapons, can readily be taken toward that

end. But I would underscore that the real issue here is not the path – it is the willingness to understand the journey’ (Remarks made at the National Press Club, Washington DC, 4 December 1996)

- **Michael Carver** (British Chief of Defence Staff, 1973–6)
- **Jacques Cousteau** (scientist)
- **Jayantha Dhanapala** (Ambassador of Sri Lanka and president of the 1995 NPT Conference)
- **Rolf Ekeus** (Swedish Ambassador; UN Special Commissioner for Iraq)
- **Nabil Elaraby** (Egyptian Ambassador to UN)
- **Ryukichi Imai** (Japanese Ambassador to UN)
- **Paul Keating** (Former Australian Prime Minister):

*‘With the tragedies of World War II and the Cold War tension now behind us, we have for the first time in many generations an opportunity to remake our concepts of world security and to take positive steps toward a world without nuclear weapons. It is an opportunity that we must not waste’ (‘Why Australia asks France to halt nuclear tests in the Pacific’, *International Herald Tribune*, 18 August 1995)*

- **Ronald McCoy** (Vice President, International Physicians for the prevention of nuclear war)
- **Robert McNamara** (see above)
- **Robert O’Neill** (Professor, Oxford University)
- **Qian Jiadong** (Chinese Ambassador to UN)
- **Michel Rocard** (French Prime Minister, 1988–91)
- **Joseph Rotblat** (Nobel Peace Prize Winner 1995, President of Pugwash, physicist)
- **Roald Sagdeev** (Russian Academy of Sciences)
- **Maj Theorin** (former Swedish Ambassador to UN)

— The Report of *The Commission on Global Governance*, ‘Our Global Neighbourhood’ under the Chairmanship of *Ingvar Carlsson* (1995):

‘The international community should reaffirm its commitment to progressively eliminate nuclear and other weapons of mass destruction from all nations, and should initiate a program to make that goal a reality in ten to fifteen years.’

— **Lewis Dunn** (former US Assistant Director of ACDA) in his article ‘NPT 1995: Time to shift gears’, in *Arms Control Today*, November 1993, p. 17:

‘For the first time in many decades, the possibility exists of a fundamental reorientation of how the United States, Russia and the other acknowledged nuclear powers think about nuclear weapons.’

— **Andrew Mack** (Professor of International Relations, Australian National University) in his article ‘Nuclear Weapons: a powerful case for getting rid of them’, in *International Herald Tribune*, 19 August 1996:

'Nuclear disarmament should be taken seriously because only the most naïve optimist could believe that thousands of nuclear weapons can be deployed indefinitely without being used, by accident or design.'

- **Harald Müller** (Director, Peace Research Institute, Frankfurt) in his report submitted to the Commission of the European Communities, 'Nuclear Non-Proliferation: For a Comprehensive Strategy' (August 1993):

'There is no reason – not at all under the changed circumstances – to give up the utopia of a nuclear-free world, how difficult the way thither ever may be.'

Appendix II: Nuclear Nonproliferation Treaty (1968)

The States concluding this Treaty, hereinafter referred to as the 'Parties to the Treaty',

Considering the devastation that would be visited upon all mankind by a nuclear war and the consequent need to make every effort to avert the danger of such a war and to take measures to safeguard the security of peoples,

Believing that the proliferation of nuclear weapons would seriously enhance the danger of nuclear war,

In conformity with the resolution of the United Nations General Assembly calling for the conclusion of an agreement on the prevention of wider dissemination of nuclear weapons,

Undertaking to cooperate in facilitating the application of International Atomic Energy Agency safeguards on peaceful nuclear activities,

Expressing their support for research, development and other efforts to further the application, within the framework of the International Atomic Energy Agency safeguards system, of the principle of safeguarding effectively the flow of source and special fissile materials by use of instruments and other techniques at certain strategic points,

Affirming the principle that the benefits of peaceful applications of nuclear technology, including any technological by-products which may be derived by nuclear-weapon States from the development of nuclear explosive devices, should be available for peaceful purposes to all Parties to the Treaty, whether nuclear-weapon or non-nuclear-weapon States,

Convinced that, in furtherance of this principle, all Parties to the Treaty are entitled to participate in the fullest possible exchange of scientific information for, and to contribute alone or in cooperation with other States to, the further development of the applications of atomic energy for peaceful purposes,

Declaring their intention to achieve at the earliest possible date the cessation of the nuclear arms race and to undertake effective measures in the direction of nuclear disarmament,

Urging the cooperation of all States in the attainment of this objective,

Recalling the determination expressed by the Parties to the 1963 Treaty banning nuclear weapons tests in the atmosphere, in outer space and

under water in its Preamble to seek to achieve the discontinuance of all test explosions of nuclear weapons for all time and to continue negotiations to this end,

Desiring to further the easing of international tension and the strengthening of trust between States in order to facilitate the cessation of the manufacture of nuclear weapons, the liquidation of all their existing stockpiles, and the elimination from national arsenals of nuclear weapons and the means of their delivery pursuant to a Treaty on general and complete disarmament under strict and effective international control,

Recalling that, in accordance with the Charter of the United Nations, States must refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any State or in any other manner consistent with the Purposes of the United Nations and that the establishment and maintenance of international peace and security are to be promoted with the least diversion for armaments of the world's human and economic resources,

Have agreed as follows:

Article I

Each nuclear-weapon State Party to the Treaty undertakes not to transfer to any recipient whatsoever nuclear weapons or other nuclear explosive devices or control over such weapons or explosive devices directly, or indirectly, and not in any way to assist, encourage, or induce any non-nuclear-weapon State to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices, or control over such weapons or explosive devices.

Article II

Each non-nuclear weapon State Party to the Treaty undertakes not to receive the transfer from any transferor whatsoever of nuclear weapons or other nuclear explosive devices or of control over such weapons or explosive devices directly, or indirectly; not to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices; and not to seek or receive any assistance in the manufacture of nuclear weapons or other nuclear explosive devices.

Article III

1. Each non-nuclear-weapon State Party to the Treaty undertakes to accept safeguards, as set forth in an agreement to be negotiated and concluded with the International Atomic Energy Agency and the Agency's safeguards system, for the exclusive purpose of verification of the fulfillment of its obligations assumed under this Treaty with a view to preventing diversion of nuclear energy from peaceful purposes to nuclear weapons or other nuclear explosive devices. Procedures for the

safeguards required by this Article shall be followed with respect to source or special fissile material whether it is being produced, processed or used in any principal nuclear facility or is outside any such facility. The safeguards required by this Article shall be applied on all source or special fissile material in all peaceful nuclear activities within the territory of such State, under its jurisdiction, or carried out under its control anywhere.

2. Each State Party to the Treaty undertakes not to provide:

a) source or special fissile material, or
b) equipment or material especially designed or prepared for the processing, use or production of special fissile material, to any non-nuclear-weapon State for peaceful purposes, unless the source or special fissile material shall be subject to the safeguards required by this Article.

3. The safeguards required by this Article shall be implemented in a manner designed to comply with Article IV of this Treaty, and to avoid hampering the economic or technological development of the Parties or international cooperation in the field of peaceful nuclear activities, including the international exchange of nuclear material and equipment for the processing, use or production of nuclear material for peaceful purposes in accordance with the provisions of this Article and the principle of safeguarding set forth in the Preamble of the Treaty.

4. Non-nuclear-weapon States Party to the Treaty shall conclude agreements with the International Atomic Energy Agency to meet the requirements of this Article either individually or together with other States in accordance with the Statute of the International Atomic Energy Agency. Negotiation of such agreements shall commence within 180 days from the original entry into force of this Treaty. For States depositing their instruments of ratification or accession after the 180-day period, negotiation of such agreements shall commence not later than the date of such deposit. Such agreements shall enter into force not later than eighteen months after the date of initiation of negotiations.

Article IV

1. Nothing in this Treaty shall be interpreted as affecting the inalienable right of all the Parties to the Treaty to develop research, production and use of nuclear energy for peaceful purposes without discrimination and in conformity with Articles I and II of this Treaty.

2. All the Parties to the Treaty undertake to facilitate, and have the right to participate in, the fullest possible exchange of equipment, materials and scientific and technological information for the peaceful uses of nuclear energy. Parties to the Treaty in a position to do so shall also cooperate in contributing alone or together with other States or international organisations to the further development of the applications of nuclear energy for peaceful purposes, especially in the territories of non-nuclear-weapon States Party to the Treaty, with due consideration for the needs of the developing areas of the world.

Article V

Each Party to the Treaty undertakes to take appropriate measures to ensure that, in accordance with this Treaty, under appropriate international procedures, potential benefits from any peaceful applications of nuclear explosions will be made available to non-nuclear-weapon States Party to this 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.

Article VI

Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to 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.

Article VII

Nothing in this Treaty affects the rights of any group of States to conclude regional treaties in order to assure the total absence of nuclear weapons in their respective territories.

Article VIII

1. Any Party to the Treaty may propose amendments to this Treaty. The text of any proposal amendment shall be submitted to the Depository Governments which shall circulate it to all Parties to the Treaty. Thereupon, if requested to do so by one-third or more of the Parties to the Treaty, the Depository Governments shall convene a conference, to which they shall invite all the Parties to the Treaty, to consider such an amendment.

2. Any amendment to this Treaty must be approved by a majority of the votes of all the Parties to the Treaty, including the votes of all nuclear-weapon States Party to the Treaty and all other Parties which, on the date the amendment is circulated, are members of the Board of Governors of the International Atomic Energy Agency. The amendment shall enter into force for each Party that deposits its instrument of ratification of the amendment upon the deposit of such instruments of ratification by a majority of all the Parties, including the instruments

of ratification of all nuclear-weapon States Party to the Treaty and all other Parties which, on the date the amendment is circulated, are members of the Board of Governors of the International Atomic Energy Agency. Thereafter, it shall enter into force for any other Party upon the deposit of its instrument of ratification of the amendment.

3. Five years after the entry into force of this Treaty, a conference of Parties to the Treaty shall be held in Geneva, Switzerland, in order to review the operation of this Treaty with a view to assuring that the purposes of the Preamble and the provisions of the Treaty are being realised. At intervals of five years thereafter, a majority of the Parties to the Treaty may obtain, by submitting a proposal to this effect to the Depository Governments, the convening of further conferences with the same objective of reviewing the operation of the Treaty.

Article IX

1. This Treaty shall be open to all States for signature. Any State which does not sign the Treaty before its entry into force in accordance with paragraph 3 of this Article may accede to it at any time.

2. This Treaty shall be subject to ratification by signatory States. Instruments of ratification and instruments of accession shall be deposited with the Government of the United Kingdom of Great Britain and Northern Ireland, the Union of Soviet Socialist Republics and the United States of America, which are hereby designated the Depository Governments.

3. This Treaty shall enter into force after its ratification by the States, the Governments of which are designated Depositories of the Treaty, and forty other States signatory to this Treaty and the deposit of their instruments of ratification. For the purposes of this Treaty, a nuclear-weapon State is one which has manufactured and exploded a nuclear weapon or other nuclear explosive device prior to 1 January 1967.

4. 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 date of the deposit of their instruments of ratification or accession.

5. The Depository Governments shall promptly inform all signatory and acceding States of the date of each signature, the date of deposit of each instrument of ratification or of accession, the date of the entry into force of this Treaty, and the date of receipt of any requests for convening a conference or other notices.

6. This Treaty shall be registered by the Depository Governments pursuant to Article 102 of the Charter of the United Nations.

Article X

1. Each Party shall in exercising its national sovereignty have the right to withdraw from the Treaty if it decides that extraordinary events, related to the subject matter of this Treaty, have jeopardized the supreme interests of its country. It shall give notice of such withdrawal to all other Parties to the Treaty and to the United Nations Security Council three months in advance. Such notice shall include a statement of the extraordinary events it regards as having jeopardized its supreme interests.

2. Twenty-five years after the entry into force of the Treaty, a conference shall be convened to decide whether the Treaty shall continue in force indefinitely, or shall be extended for an additional fixed period or periods. This decision shall be taken by a majority of the Parties to the Treaty.

Article XI

This Treaty, the English, Russian, French, Spanish and Chinese texts of which are equally authentic, shall be deposited in the archives of the Depository Governments. Duly certified copies of this Treaty shall be transmitted by the Depository Governments to the Governments of the signatory and acceding States.

In witness whereof the undersigned, duly authorized, have signed this Treaty.

Done in triplicate, at the cities of London, Moscow and Washington, the first day of July, one thousand nine hundred and sixty-eight.

Notes

INTRODUCTION

1. According to the Nuclear Nonproliferation Treaty (NPT), the Nuclear Weapon States are those states which have produced and exploded a nuclear weapon or other nuclear explosive device before 1 January 1967. These are the US, Russia, the UK, France and China – exactly the five states with permanent seats and corresponding veto power in the Security Council of the UN. To refer to them, we will use the term ‘Nuclear Weapon States’. Apart from these there are three states – Israel, India and Pakistan – which possess ‘de facto’ nuclear weapons or at least are able to produce nuclear weapons in a very short period of time. These ‘nuclear weapon states’ (without capitals) are also called threshold states.

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CHAPTER 3

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EPILOGUE

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APPENDIX I

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