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Foreword

The release of atom power has changed everything except our way of thinking... the solution to this problem lies in the heart of mankind.

Albert Einstein

As this Foreword is being written, the tenth anniversary of President Nazarbayev's decision to close the Semipalatinsk nuclear weapons complex is drawing near. The world should take notice of this anniversary, of the extraordinary events which have taken place over these past ten years, and of the man who specifically engineered a nuclear weapons-free future for his nation. This book is that story.

Actually, the story began nearly 52 years ago, on August 29, 1949 at 7 a.m. local time in Semipalatinsk, then in the heart of Soviet Central Asia. At that moment, the Soviet Union changed history with its first atomic detonation. That event, which President Nazarbayev chillingly, and sadly, depicts in this book, began a decades-long devastation of a large part of Kazakhstan, leading to radiation sickness, environmental degradation and, ultimately in the President's mind, an unacceptable burden for this newly independent nation.

The goal of stopping – and, ideally, reversing – the proliferation of nuclear weapons remains at the top of the world's agenda. There is more than enough evidence that several nations are

attempting to acquire such weapons, as well as the likely implications of their success. Yet in the midst of this concern, there are also some examples of leaders doing the right thing for their countries and for the rest of the world.

President Nazarbayev's move ten years ago to rid Kazakhstan of nuclear weapons and the ability to deliver them was a decision based on both logic and emotion. It was a response to the growing revulsion of many Kazakhstanis about the sickness and environmental degradation wrought by Semipalatinsk as well as a logical calculus about the new threats which would face a Kazakhstan if it chose to keep this legacy of the collapsed Soviet Union.

President Clinton has called Kazakhstan's approach on non-proliferation an "...historic step [that] sets an example for the entire world at a pivotal time in international non-proliferation efforts". Former President George Bush hailed Kazakhstan's decision to become a non-nuclear weapons state as a "momentous stride toward peace and stability".

Ultimately, President Nazarbayev poses to the reader the central question in this book quite starkly: "Could you, knowing all this, endanger the future of your young country for the sake of the ephemeral benefits of possessing nuclear weapons?" And just as clear is his response: "I don't think that anyone could ever doubt that there was only one answer".

His actions over the past ten years are a response to Albert Einstein's famous call for a change in our thinking. President Nazarbayev acted from his heart and has shown the way to think anew in the nuclear age. This book brings important lessons to its readers and the world.

Former Senator Sam Nunn
Atlanta, Georgia
July, 2001

Introduction

When the history of the nuclear age is written, Kazakhstan will merit a special chapter. Among states that had a modern, superpower nuclear arsenal within reach, if not their grasp, Kazakhstan, Ukraine, and Belarus stand alone in having chosen to renounce nuclear weapons and join the community of nations as non-nuclear weapons states. Kazakhstan's president, Nursultan Nazarbayev, played the decisive role in assuring his nation this unique distinction.

While these three independent national decisions involved a host of factors from international economic incentives to political inducements to innovative American responses, such as the Nunn-Lugar Cooperative Threat Reduction initiative, the leaders of each of these three states held the ultimate power of decision. At significant costs and risks, any or all of these states could have decided to retain the weapons on their territory and thus completely realign the world's nuclear geography.

After the first test of nuclear weapons in 1945, seven nations sought to address their national security challenge by acquiring nuclear arsenals, the U.S. (1945), the Soviet Union (1949), the UK (1952), France (1960), China (1964), India (test 1974, overt 1998), and Pakistan (1998). An eighth, Israel, acquired nuclear weapons but refused to acknowledge the fact publicly.

Had Kazakhstan followed in these nations' footsteps, the history of the 20th century could have changed dramatically.

Kazakhstan's choice seems "inexplicable" to students of international relations who think of themselves as "realists". According to these theories of international relations, nations seek first their own survival and security. When threatened by long-standing adversaries, especially adversaries armed with superior military capabilities, given the opportunity, nations quite naturally seek nuclear weapons as a "great equalizer". So the Soviet Union acquired nuclear weapons to match the U.S. arsenal; China to defend itself against the Soviet Union; India to balance China; Pakistan to counter India.

Why not Kazakhstan? After 1000 years of history in which Russia had dominated the Ukraine and Kazakhstan, these nations surely faced – and felt – a potential Russian threat to their security and survival.

This book offers the personal reflections of one of these leaders, President Nursultan Nazarbayev of Kazakhstan, who clearly played the decisive role in his nation's decision to rid itself of nuclear weapons. Here he shares his own thoughts on how the decision was made for Kazakhstan in the context of historical and cultural factors that influenced this choice. He also reminds us clearly that the challenges of nuclear weapons and of proliferation did not end with these momentous decisions, but still hangs over us today as the greatest risk to mankind. He challenges us to look inside ourselves as the kazakh people did in the early 1990s and consider the role of nuclear weapons with the kind of world we would like to build for those who follow us.

While only the reflections of one man, Nazarbayev speaks from a truly unique perspective. Following the breakup of the Soviet Union in 1991, Kazakhstan held on its territory the world's fourth largest nuclear arsenal with far more weapons than France, the United Kingdom, or China combined. In addition, Kazakhstan had two other distinctions. It counts among its mineral wealth 25 percent of the world's natural uranium, and it

is the site of the first Soviet nuclear test. Its territory had served as the location for much of the nuclear weapons development since 1949. In this latter role, Kazakhstan had experienced the contamination and devastation of hundreds of above ground and below ground nuclear detonations. Therefore, as President Nazarbayev comments, Kazakhstan had a unique knowledge of both the treasure and the threat presented by the weapons and the materials.

As Assistant Secretary of Defense and a member of the Department of Defense leadership team in the early Clinton administration, I had the opportunity to observe President Nazarbayev making two critical decisions that contributed immeasurably to international security. The first was the December 1993 decision of the parliament of Kazakhstan to accede to the nuclear Non-Proliferation Treaty as a non-nuclear state. The second was the hectic series of events in 1994 which led up to "Operation Sapphire", the transfer of 1,320 pounds of weapons-grade uranium from Kazakhstan to the United States.

For the United States Government, the decision by Kazakhstan, Ukraine, and Belarus to transfer their nuclear weapons back to Russia, as a single custodian, was an essential step in reducing the risk of proliferation. Had the collapse of the Soviet Union led to three more heavily armed nuclear states, each with their own unique challenges in properly securing and maintaining these weapons and the associated materials, the likelihood of proliferation to Iran, Iraq, or even terrorist groups which are desperately seeking these weapons would have been far higher. I hasten to add that this is not because the states or their peoples were any less responsible or concerned than Russians, but only that in the midst of dramatic social transformations, each of these nations would have been severely stretched to recreate on a national basis all the measures and safeguards that the Russians had inherited from the Soviet Union.

The Kazakh decision of Operation Sapphire was in many ways equally important. In retrospect, this is truly the stuff of a spine-tingling movie or novel. In brief, kazakh authorities discovered that in addition to the weapons and test facilities on their territory at the end of the Cold War, they had also inherited a cache of weapons-grade uranium sufficient for production of more than 100 additional nuclear weapons. On the world market to those seeking nuclear weapons, this certainly represented hundreds of millions of dollars to a state with severe economic challenges. Under President Nazarbayev, however, the kazakh government in consultation with both Russia and the United States made the decision to safeguard the material by transferring it to storage in the United States.

The significance of both of these choices cannot be overestimated. The potential consequences of even a few of these weapons or a portion of the material falling into terrorist hands do not require great imagination. Had the truck parked outside the Oklahoma City Federal Office Building had only a softball size device of nuclear material, it would have caused the city, rather than the building, to be totally destroyed. Similarly, had the terrorists who attacked the World Trade Center had access to a few kilograms of HEU, lower Manhattan could have been devastated.

Counterfactuals – what might have beens – challenge the imagination of reflective historians. Had a kazakh leader sought to wrest operational control of nuclear weapons from former Strategic Rocket Forces' troops whose chain of command continued to run to Moscow, would they have succeeded? Would Moscow have taken this as a casus belli and attacked these missile facilities or indeed Kazakhstan itself? Had a contest for control of the nuclear arsenals ensued, would some of these weapons have been fired? If so, since most of the warheads

sat mounted on ICBMs that had been designed to hit and were targeted against the United States, millions of Americans could have suffered instant nuclear death.

But. But for what – or whom? But for the statesmanlike leadership of President Nazarbayev of Kazakhstan and Kravchuk of Ukraine who declared from the earliest days of independence their nations' intentions to become nuclear weapons free. But for intelligent leadership in Yeltsin's Russia and Clinton's United States who worked with these governments to turn promises into reality. But for an inventive "Trilateral Agreement" reached in January of 1994 that established a contract and schedule for return of all weapons to Russia, Russian compensation for nuclear weapons received, and a U.S. guarantee to each of the parties of the other's performance.

The hope we all shared only a decade ago that the end of the Cold War would bring in an era of peace and stability has not been realized. I share President Nazarbayev's judgement that if mankind is unable to control nuclear weapons, it will be controlled by them. Today and for the foreseeable future, the prospect of "loose nukes" – theft of weapons or weapons-usable material, sale to terrorists or rogue states, and use of such nuclear weapons to devastate modern states – is the greatest single threat to international security.

While much of the story from the United States Government about denuclearization has been told by the participants who worked with Kazakhstan in those early days to encourage them on the path of becoming a nuclear weapons free state, there is much new that this book reveals. President Nazarbayev describes in fascinating detail factors in his own life and upbringing that led him to his own views on this controversial decision, as well as insights into the cultural and historic factors shaping values among the Kazakhs that at the time we in the U.S. government too little understood or appreciated.

The pride that Kazakhs rightly feel in their responsible decisions about nuclear weapons, and the gratitude felt by the rest of us, should be adequate justification to appreciate this book. It is important, however, to realize that President Nazarbayev here offers us not only a celebration, but also a challenge. Despite the huge scientific achievements made in the last century, it will be remembered longest as the dawn of the nuclear age. As the history of a new century is being written, other national leaders face momentous decisions about nuclear weapons – decisions that can be enlightened by reflections offered in this volume.

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Preface

The twentieth century – a time when one imagined the Universe was a particle, and particles turned out to be entire universes. It was a time when humanity first disturbed the eternal rest of the atom, and the atom bit back, showing that it was stronger than scientific imagination.

Its awakened power proved that the atom was not merely an object to satisfy human curiosity in a part of the world, but that it was something greater. That it was above the world and not of it, that people did not determine its fate, but, on the contrary, the fate of humanity lay in the atom's infinite energy.

People learned to control nuclear energy, but they did not learn to control themselves. They lost trust in people and developed trust in nuclear power.

The military use of atomic energy has its own unique history. The "military atom" is hard to acquire and even harder to destroy. As a weapon it cannot be easily directed and aimed as the target is yourself, the life and culture of modern humanity. You cannot look into the human dimension of the military atom because there is nothing there but pure evil. Nuclear weaponry cannot be trusted because in the name of freedom it offers not friendship but slavery. What benefit can be gained from the nuclear trust? When will humanity truly move beyond the last stages of the Cold War and regain faith in itself?

This book is not about the limits of knowledge and not about recipes for a reevaluation of nuclear values. This book is a reflection on the progressive danger of the dictatorship of power over reason and about humanity's difficult search for a formula for nuclear security.

Nursultan Nazarbayev
Astana, Kazakhstan
August 2001

Prologue

SWORDS AND PLOWSHARES

We all base our lives on the most vivid memories of childhood – the experiences of our early years that leave a profound imprint on the formation and subsequent manifestation of our character. We recall a world of "forgotten time" and romantic discoveries, remembering events and sensations so astonishing because we experienced them for the first time. Together these experiences form a kind of social web that defines the space, borders, and capabilities of our personality. This reflective world of childhood signals, signs, and guideposts appears as a guardian angel in difficult moments, protecting as you approach the brink of the unknown and unknowable – from the collapse of human relations – from the specter of the collapse of time.

It appears that every society – be it the crew of a spaceship, a business, a nation, or the entire community of the inhabitants of the planet – retains its unity, wholeness, and meaning thanks to its inner ability to support and re-create the collective memory of good and evil of an earlier revealed knowledge.

Every new generation relives in compressed form the historical evolution of mankind and becomes a bit better than the generation before it. We improve through the gift of evolution, critical thinking, and adaptation, and from assimilating and reorganizing the experiences of earlier times.

One of the events of my childhood became so much a part of my life and fate that I can no longer tell whether I keep that story in me – or that the story keeps me.

Long before my birth, there appeared in our house an army rifle, taken by one of the relatives of my father, Abish, in a skirmish with an army detachment. It was 1916, at the height of World War I, when there arose an armed rebellion against sending kazakhs to work in the rear guard of the war that blazed in the far western part of the Russian Empire. But it was an unequal battle: well-trained regular army units were sent to fight peasant militias.

And so the rifle was kept in our family, not so much as a war trophy and symbol of family valor as a memento of the dead.

One day Grandmother Myrzabala said, "This rifle sowed death and suffering among our elders. It plunged us into sorrow. Do you want it to bring catastrophe on the heads of our young ones? 'Do not keep evil in the house.' That is the epitome of wisdom and nobility. Our memories will remain with the fallen".

No sooner said than done. After performing the ancient ritual of parting with a weapon, my father turned the rifle in to the authorities, first taking off the six-sided bayonet that had seen so much.

Village children begin working early in life. Noticing that I returned from picking greens for the baby chicks with the palms of my hands cut up by blades of grass (for not everything that grew in the meadows was clover), my grandmother gave orders for the bayonet to be turned into a sickle. "We won. There won't be another war, and a tool will come in handy", she said.

And in fact there were many weapons, our own and the enemy's, in the country. But there were very few ordinary tools like scissors, trowels, screwdrivers, and compasses.

The day came when the new sickle, a shiny crescent, was brought into the house and became the first tool that I, a peasant son, had ever had.

For the occasion Grandmother sacrificed her old spindle. She took off the red copper coin that served as a sinker, sanded the wood, attached it to the sickle handle herself, and handed it to me with the words, "Be a good master. Keep it clean and in good repair, and don't leave it any old place". And so that year my hand grew longer by the measure of the cold point of my father's metal and the warm roundness of maternal wood.

While playing games around the village, the kids would find remnants of weapons and military paraphernalia – from half-rotted bronze arrowheads from the middle ages to rust-brushed revolver frames and used shells. We played at "little war" each proud of his find. At moments like that I recalled the rifle and mentally rebuked my elders, "Why did they give way?" And I'd think about the bayonet, "Why did they reshape it?"

And my hand would squeeze tighter on the sickle that I carried, considering myself a man and tagging along after the adults to the fields, where, despite their mocking jokes, I worked away at the stalks. Then, at the riverbank or on a haystack, I would start daydreaming and begin to fence, fighting the monstrous clouds that were appearing out of nowhere. These exhausting battles made my lids heavy, and sometimes awakened by a sudden rain shower or the evening call of birds, I would run home in fright.

The hour of reckoning for my feckless daydreaming came when one of my contemporaries accidentally stepped on the sickle I had forgotten in the grass. The sight of the gushing blood and the panic-stricken boy made me think for the first time how fragile was the boundary between instrument and weapon, even though I did not learn about "materials and technologies of dual application" until much later. "Be a good master!" My grandmother's bidding, which became the refrain for many of my thoughts and actions, echoed in my ears.

When I got home, I saw a crowd of subdued people. I was told that "Grandmother went to heaven".

Years would pass, and on my first trip to New York I would see in the United Nations gardens the famous bronze statue sculpted by E. Vuchetich and read the quotation from Isaiah about the time when "they shall beat their swords into plowshares, and their spears into pruning hooks. Nation shall not lift up sword against nation; neither shall they learn war any more". I would be struck by the universality of human character and fate, in which the specifics of place and time were dominated by the yearning for goodness, development, peace, and nonviolence.

Later, as a mature adult, dealing with my countrymen and contemporaries, I would hear their own family stories, amazingly similar to my own, with natural differences in details and circumstances. Even though this plot line would appear before me more than once, in moments of grave doubt I would repeat with regret, "Why did I give them away?" And each time that I visited United Nations headquarters, I would anticipate an encounter with that moral souvenir of my childhood.

"Man merely repeats the act of creation; his religious calendar marks in the course of a single year as the cosmogonic phases that took place from the beginning". This reminiscence from Claude Levi-Strauss predominated in my thoughts, when in the sunny harvest time of September 2000 I led the delegation of the Republic of Kazakhstan to the United States to represent my country at the unprecedented Millennium Summit.

In the plane I conferred with the delegation members and, mindful of my aide's warnings about the "strict" five-minute time limit at the Summit, I absented myself from my colleagues to edit my speeches with one goal in mind – to give my thoughts the maximum amount of space in the small number of words allotted.

I heard the steady thrum of the engines and through the window saw air and space, balanced between the blue waters of the Atlantic and the blue autumnal sky above it, and occasion-

ally glimpsed fishing boats and passenger liners and the eternal anxious lighthouses, big-eyed kind wizards, illuminating safe passage to shore.

Every country that was part of the United Nations brought gifts and surprises – material or spiritual – to the Millennium. In past years, Kazakhstan, sharing the good tradition with respect, brought a gift to the United Nations and for all humanity to see – an exact copy of a sensational archeological find of the 1970s. Ever since then, the Golden Man from Kazakhstan, the mysterious guardian of peace, prosperity, and cooperation, has been on exhibit in a United Nations building.

However, Kazakhstan's most important gift – never to be erased from the memory of generations – was the act of ridding itself and its surroundings from the danger of nuclear threat.

Time changes goals and priorities, and even great deeds of yesterday gradually fade away under the bustle of daily headaches, actual problems, and frustrations of today.

Only a few hours were left until Foucault's Pendulum, keeping time with the revolution of the earth, in the lobby of the General Assembly would swing to the appointed hour and the Japanese Bell of Peace, which rings only twice a year, would toll beneath its cedar vault.

I dealt with the negative tendencies, factors, and consequences of globalization in the first part of my speech, and then, sketching the growing swirl of problems in the Central Asia region, I stressed Kazakhstan's proposed addition to the agenda of questions that should be discussed by the Security Council of the United Nations.

The problem of a growing nuclear threat could be added to the list of issues to be discussed in view of the steadfast resistance to the topic by some countries with nuclear weapons. A number of countries in the Central Asia region are on the threshold of obtaining these weapons.

After the collapse of the U.S.S.R., Kazakhstan inherited a huge arsenal of atomic weapons. Our country set the precedent of voluntarily rejecting that arsenal. Today we once again call on all nuclear powers to take concrete steps to liquidate nuclear weapons.

I had every right to use that tone, not only within the walls of the United Nations but before God Himself and all the people of the world – those who have lived their life on earth and those who still have their lives before them – because at that moment on the brink of the new millennium, the proud and bitter fate of our country was in the throes of a new birth – the moment of choice, in favor of truth, when, despite the colossal overload, dramatic turns, and fantastic temptations of those days, we had made the only correct decision on the fate of nuclear weapons in the territory of Kazakhstan.

Should I not feel infinite gratitude toward my Guardian Angel that my personal story – the story of a boy with a sickle made from a bayonet – turned miraculously, many years later, into the story of the voluntary refusal of the newly independent Kazakhstan to have nuclear weapons at the beginning of the millennia that followed the breakdown of the U.S.S.R.?

September 6, 2000, had come.

The issue I raised took no more than one-twelfth of my entire speech, but it is a topic that requires a separation of the grains of realism from the chaff of illusion.

It is still a serious reason for looking into the eyes of boys in cities and villages, on streets and squares, across the entire face of the earth, to find out what these children are thinking, what they are carrying in their sun-scented heads, and what moral signals from their childhood will affect the main decisions in their lives.

Kazakhstan refused nuclear weapons. Time showed the wisdom of our choice. The world should be told about this, and it is best heard from the primary source.

I see this frank book as an immediate invitation to dialogue, disarmament, and cooperation among all those who give even the least bit of thought to the cruel gift left by the passing century for the new century.

CHAPTER 1

KAZAKHSTAN: TOWARD A NUCLEAR-FREE FUTURE

DIVISION OF A SUPERPOWER: THE FOURTH STRONGEST NUCLEAR POWER

The incredibly dynamic twentieth century, with its "hot" and "cold" world wars, entered history as a time of a duel, unprecedented in scope and methods, of opposition between two blocs of intractable and mutually exclusive economic and cultural systems. It was a period characterized by the total supremacy of weapons. The first half of the century, the era of "hot" war, was defined by gunpowder. The second half, the Cold War, ushered in the age of the atom bomb. The global standoff brought about by this grand historic duel has fortunately been transformed by the arrival of the new century.

The end of the twentieth century was marked by powerful geopolitical shocks related to the collapse of the last empire in history, the Soviet Union. Within an almost imperceptible window of time, the U.S.S.R., burdened by the intolerable weight of internal political problems and unable to compete in the arms race, ceased to exist.

The newly-created post-Soviet reality at the start of the 1990s can best be compared to the domestic scene after the sudden death of a parent. With no time to prepare the children must begin newly emancipated lives – but not without first going through a difficult funeral and a controversial division of inheritance rights and obligations.

In the case of our mighty union, opening up the parent's treasure chest revealed terrible secrets. The collapse of the U.S.S.R. put before the newly independent states the problem of a gigantic arsenal of atomic weapons and delivery systems located in the territories of several post-Soviet republics. Kazakhstan was among the heirs of the nuclear arsenal. From the day it was freed, the republic faced the complicated question: What should be done with these terrible weapons?

There is an old kazakh proverb: "Take you in? But you're a monster! Chase you away? But you're a treasure!" The air of the early 1990s was filled with troubles and uncertainty, and the question of whether or not Kazakhstan should be a nuclear power was a complex one, attracting much attention and eliciting a storm of passions and emotions. We knew the answer to the question would affect our new nation for years to come. We had no choice but to embark on the difficult path of measuring conclusions and counterarguments, doubts and fears in a grand debate as we deliberated whether or not Kazakhstan would become a nuclear power.

Even today, not everyone has a sufficiently clear and precise idea of how powerful and dangerous was the nuclear potential remaining in Kazakhstan after the collapse of the U.S.S.R.

Exhaustive information on strategic and tactical nuclear weapons is somehow like the smile of the Cheshire cat: everyone can see the "nuclear" grin but very few can see the rest of the cat. The situation was similar with our nuclear weapons. Policy analysts speak about the quantity of nuclear warheads in the territory of Kazakhstan, a figure that is known precisely, but they never mention the capacity. Today the curtain can be lifted on that secret.

At the beginning of 1991, there was an enormous arsenal of weapons of mass destruction based in Kazakhstan, including 1,216 nuclear warheads for intercontinental ballistic missiles (ICBMs) and nuclear devices for heavy bombers. The complex of nuclear strategic forces included all kinds of the most modern means of mass destruction and delivery systems for nuclear shells.

At different ends of the country, at a great distance from one another, were air bases for strategic multi-target bombers and underground sites for ICBMs armed with separating nuclear warheads. In the very center of Kazakhstan, the 38th Division of

the Strategic Rocket Command (RVSN) was located in the Akmolinsk Oblast. The division had, in addition to the ground units and support services, around 60 missile silos, whose work was coordinated by eight universal command points.

Another complete strategic missile complex, the 57th Missile Division, was situated in Eastern Kazakhstan and also contained the "standard setup" – around 60 silos and eight universal command points. In the south of the country, in Kyzylordinsk Oblast, there was a complex of 14 silos, and another 12 silos for ballistic nuclear missiles located in the Balapan near the Semipalatinsk nuclear test site.

On the silo level, the servicemen on duty were under the control of the so-called universal command points. The special underground bunker that housed these command points was an autonomous system designed to engage upon receiving orders from the Control Center. Encrypted computer monitors showed the information needed for work: the ciphered orders and access codes for launching. The men on duty saw only numbers, numbers, and more numbers, virtual representations of the physical world represented by highly secure computer code. The names of the strategic targets were hidden, and the actual results of the efforts were never known. If the duty officers at the command point received orders to launch, the men on duty would never know where their missile had gone. Mass destruction was abstracted to the level of pure math.

The Control Center's command had to be obeyed under all conditions, so there were measures in place for backup launching. Hypothetically speaking, if all the electronics and equipment for launching ICBMs gave out, the missile divisions had autonomous launching capability, also known as the "dead man's crew". The job of this team was to get inside the missile silo in emergency situations and hand-launch the ICBM. These men would have only seconds to get out or risk incineration by the

missile's launch. Only the heroes of best-selling novels on the nuclear apocalypse can escape a silo during a launch and stroll out as if they had been relaxing in a sauna. In reality, the men might not have even five minutes to evacuate to a safe location.

The RVSN was the military elite of the former U.S.S.R. It was very hard to get into these forces, and impossible to get out. The military high command believed that the outcome of a possible nuclear conflict depended on them and them alone. I've met officers who have graduated from the RVSN training schools, served in the corps and, to put it metaphorically, had their fingers on "the button". I can state without any exaggeration that the most courageous and cool-headed men served in the RVSN. It was thanks to the officers and servicemen of the RVSN, their training, and their exceptional sense of responsibility through all those years that we lived peacefully next to those monstrous weapons.

In total, in Kazakhstan there were 148 missile silos for launching ICBMs from the ground. Those silos held exactly 104 R-36M UTTKh ICBMs (SS-18s, in Western terminology). Each of these missiles had a warhead of several multiple independently targeted re-entry vehicles (MIRVs), up to 10 each. The payload of the SS-18 missile was 7.6 tons, and the radius of destruction around 12,000 kilometers.

We expect our household appliances to have certificates of authenticity, instruction manuals, and warranties that guarantee the lifetime of their use. However strange this may seem to civilians, the nuclear monsters that could fly and destroy entire cities also had certificates and warranties. They made clear that, for instance, the enormous metal cylinder called the RS-20 would have a useful military life span of 10 years. After that, the "warranty" was no longer valid.

The ICBM R-36M UTTKh is in the Guinness Book of the World Records as being the most advanced missile in its class in

terms of technical characteristics and destructive force. It was a world champion among ICBMs. It is highly symbolic that in the West this missile was called "Satan".

There truly was something satanic about the fierce array of ballistic missiles with separating nuclear warheads based in our territory. They were overwhelming just in their size. I always felt uncomfortable just looking at the enormous body of "Satan" – 34 meters tall and three meters in diameter. By their very existence, regardless of their possible target, these missiles aroused a feeling of dread and horror. There was a sense that they could turn against their owners at any moment with satanic unpredictability. In the early 1990s, we faced a question that was not so much a technical issue as an ethical quandary: Should we continue terrifying one and all or should we free humanity forever from the evil shadow of "Satans" and other nuclear weapons?

In addition to our ground-based missile resources, a no less powerful strike force was the 79th Air Division, based near Semipalatinsk. It consisted of 27 heavy strategic long-range bombers of the TU-95MS6 type (Bear-H6 in the West) and 13 bombers of the analogous TU-95MS16 class (Bear-H16), which were armed with AS-15s, the cruise long-range nuclear missiles.

The roundtrip distance for these strategic "Bears" was about 8,300 kilometers. The TU-95MS6 could carry up to six cruise missiles with nuclear warheads while the TU-95MS16 could carry up to 16 cruise missiles with nuclear warheads.

To fully appreciate the scope of this destructive power it is useful to see Kazakhstan's nuclear arsenal of 1,216 warheads in broader geo-political context. Let me cite some figures on the atomic weaponry of other nuclear states.

In 1995 – that is, the final year of the removal of nuclear weapons from the territory of Kazakhstan – Great Britain had approximately 264 to 296 atomic warheads, based on the GR-1 Tornado bomber and the ballistic missiles of the AZ-TK Polaris

and D-5 Trident submarines. Total payload was between 40 and 400 kilotons.

The French Republic had approximately 512 nuclear weapons ranging from 80 kilotons to one megaton, based on several delivery systems including the Mirage-IVP and Mirage-2000H planes, the Super-Etendard aircraft carrier, and in the ballistic missiles S3D and M-4A/B.

The People's Republic of China had an arsenal of 284 atomic bombs from 200 kilotons to five megatons. They were located on strategic B-5, B-6, and A-5 bombers and on ballistic underground missiles CSS-2, CSS-3, CSS-4, CSS-6, and CSS-N-3.

Compared with some nuclear powers, Kazakhstan had a gigantic destructive nuclear arsenal that was larger than all three of these states combined. The total nuclear force of the Kazakhstan weapons was enough to guarantee the destruction of the most important strategic objects of all the potential enemies of the former Soviet Union. Using these weapons would have literally wiped from the face of the earth over a thousand cities with many hundreds of millions of people at the very least. In fact, it could have destroyed entire continents.

Kazakhstan was not only the site for strategic nuclear weapons and delivery systems. The monstrously huge military-technical complex was a well-oiled machine, a kind of state within a state. It had its own transport pool (missiles and aviation systems), its own communications (radar stations and secure telecommunications), underground cities (silos for the ICBMs), administration (operations command points), industry (uranium mines and processing plants for preliminary enrichment), research institutions (nuclear test sites, reactors, and military research laboratories), and its own citizens. And of course it controlled management of the atomic and thermonuclear warheads.

You could say that with the collapse of the U.S.S.R., Kazakhstan obtained the complete base for executing the full military

nuclear cycle: the testing, modernization, and production of nuclear weapons. There was an entire complex of nuclear test sites, which at various times tested all kinds of atomic weapons and missiles and planes for delivering them. Bearing in mind the number of nuclear and nuclear missile test sites on our territory, all of Kazakhstan was in fact a massive nuclear test site.

As one of the key centers of the nuclear complex – Semipalatinsk was a most important strategic asset for the Soviet Union. The developed infrastructure of that site included the secret city of Kurchatov (Semipalatinsk-21), a reactor complex, a system of test sites including Balapan, G (a seismological complex in Degelen), Sh (the so-called Trial Field), and numerous other smaller test launch pads. In the course of a half century, 456 nuclear detonations were carried out on these launch pads of the Semipalatinsk test site. These tests helped to raise the destructive force of atomic weapons and to perfect new techniques for delivery.

When you learn of the immeasurable ills these "peaceful" tests caused, you wonder: who needed the perfection of nuclear weapons and why? To be able to wipe a city from the face of the earth and then flatten it 10 times more? To have the ability to fully destroy not only a city, but a country and even, after some more "perfecting", a continental ecosystem from sea to sea? With such madness one wondered: why not just destroy the entire planet in one go?

When people say complacently that they were right to perfect the bomb and that now, you see, we can destroy only people while the material and technological valuables will remain, I wonder: do the antinuclear testing activists truly not understand something about our world? There is a huge imbalance between the level of human consciousness and the level of "the technology of effective destruction". You think that you can understand the feelings of a caveman waving a wooden club. Is it the same feeling felt by the men waving a nuclear club? The Japanese, by

the way, have invented a room for venting feelings. You go into that room, beat a dummy, smash dishes, and break a few chairs, and then go outside with a pure heart and peaceful thoughts. They say it really helps! So when I hear the opinion that video games develop aggression and the need for violence, I have my doubts. Maybe mimicking violence in the name of justice, which is the plot line of most of these games, actually softens people and gives vent to aggression instead of adding to it.

If you have to get rid of an excess of aggression, it's better to do it in the virtual world, rather than the real world. And I sincerely hope that the unstoppable desire of the eggheads to do computer simulations of the detonation of nuclear and hydrogen bombs will not turn into something real and threatening but instead will gradually evolve into a contained process within the military. Go ahead and play your games, but leave the rest of us out of it!

Besides the presence of strategic and tactical nuclear arsenals and test sites, our republic had the necessary infrastructure and resources for producing the active components of nuclear weapons.

The mines of Kazakhstan account for around 25 percent of the known world resources of natural uranium, which after enrichment can be used not only as fuel for nuclear energy reactors but for the creation of atomic weapons. We provided 85 percent of the nuclear fuel for atomic installations and sites of the Soviet Union, and on the whole, our republic today remains the source of up to 5 percent of the world's production of uranium ore.

In the early 1990s, Kazakhstan also had the entire scientific research base needed to create and modernize nuclear weapons. Almaty was the site of the Institute of Nuclear Physics (then the largest in the region), where there was a large number of highly qualified and talented nuclear scientists. Many specialists continue to work in this complex area at the institute.

An entire complex of nuclear reactors located on the territory of Kazakhstan was used for scientific-technological and military uses. The world famous Aktau reactor, with fast neutron BN-350, is the only one of its kind. The Almaty Institute of Nuclear Physics is doing active research on the VVER-K reactor, with a yield of 10 mV, which uses fuel enriched to 36 percent. There was also a complex of Semipalatinsk reactors – the so-called Baikal object – that included an IVG-IM-type reactor, an IGR impulse graphite reactor with water cooling with highly-enriched reactor fuel, and a research RA-type reactor with gas cooling and low-grade uranium fuel.

In the territory of Kazakhstan there are large enterprises for processing and performing the preliminary enrichment of uranium. For instance, the Ulbinsky Metallurgical Plant, whose main product is fuel tablets with low-grade uranium for atomic reactors.

Plants for performing the high enrichment of natural uranium and raising it to weapon-grade were located in Russia. However, if we were to imagine only hypothetically that Kazakhstan wanted to remain a nuclear state with the appropriate technology, it would have taken only a few years for the Ulbinsky plant to manufacture its own highly enriched uranium. Besides, we already had enough enriched uranium that could have been used for the production of atom bombs. At the Ulbinsky plant alone there was almost 600 kilograms of high-grade weapon uranium. That would have been enough for a dozen nuclear bombs. (Later, in accordance with a special treaty between the Republic of Kazakhstan and the United States within the framework of the Sapphire Project, this high-grade uranium was removed to Dover, Delaware and later to Oak Ridge, Tennessee.)

There was also a base in Kazakhstan that could have been used for the production of nuclear weapons. In Semipalatinsk there was a top-secret site where nuclear bombs had been built

before: atomic warheads are usually brought in disassembled and only put together in place on a special assembly line.

Kazakhstan had almost all the necessary scientific research, mining, and even production infrastructure for the creation of its own nuclear weapon program. The international experts were not mistaken when they analyzed Kazakhstan's nuclear potential and rated our republic as the fourth nuclear state in the world, after the United States, the Russian Federation, and the Republic of Ukraine.

It looked as if fate had given us a unique opportunity: along with our independence we could have moved from the political fringe onto center stage and become a nuclear power of world significance. If we had been thinking only in strict military categories, we would have come to the conclusion that we could not afford to miss that opportunity.

However, as history now shows we chose the path of peace. Today, almost 10 years later, I am even more convinced that our decision to de-nuclearize the newly born republic of Kazakhstan was absolutely the right choice.

NUCLEAR TEMPTATION: REGIONAL SUPERPOWER OR TERRITORY OF PEACE?

As history tells it, the first explosive substance appeared in China, in areas with deposits of saltpeter, sulfur and charcoal. It is said that a certain Chinese scholar called Wan Hu built a rocket with an engine of gunpowder which blew up on ignition. A fateful beginning, but a dramatic start of the modern age of advanced weaponry. Black powder spread throughout the world. India was one of the first countries that adopted black powder as a loading explosive for a firing weapon. Vedic manuscripts mention a battle in which the combating rajahs of neighboring prin-

cipalities used firepower against each other. It was monstrous for those times and firepower did not take root in India. The main reason was, apparently, that the Indian warrior castes and strata had strongly developed chivalric traditions and considered the expansive power of explosives as beneath their dignity. Even Alexander the Great had noted the exceptional knightly qualities of the Indian tribes. It was the Indian rajah, Porus, who, of all the conquered rulers, fought the most fiercely. This was the famous battle in Ephesus, in which the Macedonian phalanx entered into savage combat with Indian elephants and iron chariots.

As Professor F. Shakhermaier, the noted expert on ancient history wrote: "This was the most brilliant battle in the history of humanity". The knightly spirit and image of the vanquished rajah made such an impression on Alexander that he made Porus his viceroy in the conquered Indian territories.

Their innate nobility and natural spirit of nonviolence kept the Indian warriors from understanding how you could kill a man without entering into honest combat with him. That is why their military code banned the use of the extremely ignoble gunpowder weapon, since with its aid an ordinary mortal could fell a knight, who by tradition had to show his military qualities and strength of spirit in an open duel.

But let us return to our day. Even after centuries and millennia of history, we face the same tormenting question: do we need to possess powerful weapons? We kazakhs came face to face with this in the years when we were establishing our independence and statehood. The people and nuclear weapons. The state and nuclear status. Love of peace and aggression, future security and constant danger, peacemaking and preparation for war. Which were we to choose?

I look back and recall those days when the decision to make the historic choice came after tortuous doubts, lengthy consultation, public debates, and negotiations of the most varied for-

mats. Truly dramatic episodes unfolded around this very complex and epochal event.

The debate on whether Kazakhstan should be nuclear brought in the entire spectrum of domestic political movements, civil positions, strategic worldviews, and mercantile interests in our society. After examining the enormous number of pros and cons, gradually the only correct decision crystallized – the Republic of Kazakhstan and Central Asia must be a zone free of nuclear weapons.

In those years there were people in our society, and quite a few of them, who believed that Kazakhstan should have kept the nuclear weapons. The press published materials that said that a schism had occurred in Kazakhstani society over keeping nuclear weapons. To set the record straight, I must say that there was argument, but no schism. No one has the right to forbid citizens to have their own opinions. But that opinion was held by only a few individuals, and I don't think I need to prove that the overwhelming majority of the population was determinedly against testing and keeping nuclear weapons.

From the very start we tended toward supporting the idea of not keeping the weapons, and at the same time there wasn't even a thought of a witch hunt against Kazakhstan's "hawks", those who spoke out for keeping the nuclear arsenal. In the first place, it was very clear that the people were definitely against atomic weapons.

There were supporters of keeping nuclear weapons on the territory of Kazakhstan at any price, and some political scientists, experts, numerous military men, and public figures – including activists from the Azat, Alash, and other grass roots organizations – spoke out loud and clear. The discussion developed in the press. Here, for example, is the opinion of an army man, a lieutenant colonel, published in the newspaper Kazakhstanskaya Pravda.

I believe that if we are left without deterrent weapons (in this case, they are nuclear), we will be left wide open to all sorts of adventurers. Who can guarantee the security of our borders now? Or do we really have nothing to protect? Are we stronger than Kuwait without nuclear weapons?

Another opinion, rather typical for the times, comes from a well-known political scientist made public at one of the many international conferences on nuclear issues held in Kazakhstan in those days:

The presence of nuclear weapons on the territory of Kazakhstan to a certain degree ... is a stabilizing temporary factor, because up to now the Republic of Kazakhstan in fact has few guarantees of inviolability and territorial wholeness". Of course, he immediately added that "when these guarantees appear ... the republic will try first of all to get rid of these nuclear weapons.

And another opinion:

The presence of nuclear weapons on the territory of Kazakhstan has to be seen as a given, a choice like the one God offered to Adam: 'Here, Adam, this is Eve. Pick out a wife for yourself.' That is, there is no alternative.

In analyzing the statements of the militant supporters of the need for nuclear weapons, I noted that there was no clearly expressed and inexorable preference for nuclear status. The statements were made for the most part with reservations. Without meaning any insult and with a light touch of irony, I can say that the people sounded like hawks who had climbed into a dovecote or doves accidentally resting in a hawk nest.

I think that there is no need to list and cite all the arguments of the hawkish wing. In general, the excuse for keeping nuclear weapons boiled down to the following arguments, which I summarize for clarity.

First of all, the recently independent Kazakhstan needed safeguards for preserving its sovereignty. In that regard, having nuclear weapons could serve as a means for deterring any

ill-wishers of our young republic. With the end of bipolar confrontation, the world situation became completely uncertain and unpredictable. Were the former enemies and rivals still enemies and rivals? Would the former small and big "brothers" turn into deadly enemies threatening the very existence of the young state, not quite yet on its feet? Would there be a chain reaction of mutual territorial pretensions among former Soviet republics in the near- and long-term? And finally, two mighty nuclear powers bordered on Kazakhstan, and each had a history many centuries long of strategic interests in Central Asia.

In these uncertain circumstances, the greater danger lay in the weakness of the young Kazakhstani army. After the collapse of the U.S.S.R., the basic military force in the territory of the republic was what had been the Soviet forces of the Central Asian Military Okrug. The total number of armed forces of Kazakhstan was around 40,000 people, but they were not very well equipped. The Kazakhstani army primarily had worn-out and obsolete technology. The general military preparedness was low. Morale was poor. The majority of former Soviet officers, who were sent to the Central Asian Military Okrug by the army, were demoralized by the collapse of the Soviet Union, to which they had sworn their loyalty. As important, Kazakhstan lacked an autonomous military capability.

"Don't ask 'Where is the enemy?' for he is outside the gate. Don't ask 'Where is the wolf cub?' for it is under the hat", our warrior ancestors used to say. Following this wise advice and also in view of the complete uncertainty of further developments in our region, the proponents of keeping nuclear weapons felt that Kazakhstan had to maintain the nuclear status quo and wait for the final distribution of political interests on the global and regional levels. They said that our republic with its nuclear club, even with a comparatively weak army, could have a weighty enough defense to restrain the potential ambitions of almost any probable foe.

And the proponents of keeping nuclear arms propagandized the principle of so-called reasonable and adequate possession: possession for the sake of possession. The hawkish wing argued that, independent of the number of nuclear warheads and delivery systems, the main thing was to have nuclear status.

As part of the argument, they proposed the thesis that Kazakhstan could manage the economic costs involved in maintaining nuclear arms. The nuclear potential of Kazakhstan, as I had mentioned, was more than 1,000 nuclear devices. From the point of view of regional domination, it is not quantity that matters, but quality. Not the size of the nuclear potential, but its very existence. In the new market conditions it was inefficient to maintain and especially keep 1,216 nuclear warheads in battle-readiness.

However, it was quite possible to realize another, much more economic and rational variant. Instead of either keeping or getting rid of the nuclear arsenal, we would merely reduce it – for instance, down to the reasonable number of 25 to 50 nuclear warheads. The situation with the delivery systems was analogous- leave one or two prepared subdivisions out of the republic's entire missile-aviation complex.

I remember that one of our home-grown Kazakhstani hawks noted wittily that nuclear weapons were like a homeopathic medicine: even in small doses it can elicit the effect of an adequately threatening containment.

From economic and organizational points of view, Kazakhstan could have managed to keep and control those remaining tactical nuclear forces in the territory of the republic. The expense, naturally, would have been enormous. The upkeep of a full-fledged missile division costs as much as the upkeep of Kazakhstan's entire army in those days. But defense expenses were only around 1 percent of the republic's gross domestic product (GDP). One could think: just add 1 percent and tighten belts a bit – and what a future lay ahead!

Subsequently, we could have created our own operative command of the tactical nuclear forces with a Kazakhstan "atomic button", develop early-warning systems, and then, with economic growth, increase our nuclear arsenal.

It is well known that a byproduct of reducing spending on the maintenance of nuclear potential is the rejection of modernizing and modifying it through experimental nuclear detonations. Academician Andrei Sakharov spoke out cogently for the possibility of rejecting nuclear testing:

This is false argumentation in the last point. We can check all the circumstances relating to keeping nuclear weapons without having a real nuclear detonation by making all the systems work with the exception of that final moment – the moment of nuclear explosion. There are methods of control that allow us to do that. The final stage of nuclear detonation, if we substitute a passive entity for nuclear fuel, does not require testing.

Of course, it would require a rather large complex of servicing to maintain the nuclear potential and the delivery systems (even a rifle needs oiling from time to time), but there was no need to keep the nuclear test sites in working order or to test atomic weapons on them. The preservation of a small number of nuclear weapons without modernizing and increasing them was within the means of the Republic of Kazakhstan, despite its negative economic situation.

Apologists for the nuclear status quo maintained that the existing arsenal could be supported for at least 10 to 20 years. In that time, we could come to a final determination of the problem of nuclear weapons on the soil of Kazakhstan. There were people in Kazakhstan who insisted with fiery rhetoric that the possession of the world's fourth-largest nuclear arsenal could bring our republic into the number of world superpowers. There were even grandiose plans for bringing Kazakhstan's army into a leading position in the world.

A mighty Kazakhstan would automatically become the center of attraction for many non-nuclear countries who sought our patronage. Statesmen for nuclear countries would stand patiently in line in order to negotiate with us. Does that remind you of anything? For me it calls to mind a nuclear version of New Vasyuki, the falsely promised modern new city from Ilf and Petrov's *Golden Calf.*

Other experts played on the strings of foreign policy dividends and bet on the "gradual acceptance effect" of our nuclear status in the world community. In their opinion the reason for possession was not so much the existence of nuclear weapons but the status of nuclear power. This status would give us trump cards in solving conflict situations and would stimulate the expansion of economic cooperation on the basis of "nuclear stability", attracting a large flow of investments under the nuclear umbrella. Our nearest neighbors and the international community would, after a period of confusion and political pressure, accept the republic's nuclear status as a given, as an inalienable part of Kazakhstan's military force.

Numerous public figures from the scientific community saw the necessity for keeping the nuclear complex as an anchor in preserving our scientific and technical potential and the future development of fundamental and applied science. They reasoned that what remained on Kazakhstan lands was not only the military component of the nuclear complex but an enormous infrastructure that was the basis of the development and functioning of atomic energy. That included huge deposits of natural uranium, scientific and research reactors, and a large number of highly qualified specialists in this growing field of obtaining and transforming energy resources.

Simultaneous with preserving the nuclear arsenal we would have the opportunity to achieve very high levels in our own scientific and technical elaborations in the field of atomic energy. In particular, the Semipalatinsk nuclear test site was home to active

research on engines running on radioactive fuel, which could be continued by bringing in the world scientific community. These arguments, despite their obvious weak points, had a number of devilish temptations.

Still, the proponents of preserving nuclear weapons were not right. Our country has probably suffered more than any other place on the planet from the apocalyptic consequences of nuclear testing. We simply did not have the moral right to continue destroying our people and land with nuclear detonations. Also, the possession of nuclear weapons would have brought the young independent state much more harm than good.

It was not so much a question of gigantic material costs that Kazakhstan would have had to suffer in keeping the nuclear arsenal as of the destructive geopolitical consequences for the Central Asia region and the entire system of global security. If Kazakhstan kept its atomic arsenal, it would have torpedoed the system of nonproliferation that had formed over decades and would have had extremely negative political repercussions for the republic.

But their most important mistake was that they considered nuclear weapons a universal guarantor of security for Kazakhstan's future. The individualistic approach, expressed in the arms race as the basic principle of guaranteeing security through deterrence of the "probable foe", had shown its dead end by the 1990s. The history of humanity, and especially of Europe, which had undergone numerous terrible wars over the centuries, has taught us that you can no longer guarantee a state's security through the principle, "If you want peace, prepare for war".

Experience has shown that increasing military potential no longer guarantees a country's security and, on the contrary, becomes a destabilizing factor. Preserving nuclear weapons for us was commensurate with making Kazakhstan's citizens hostages.

These were the considerations that shaped our decision to reject nuclear weapons.

REJECTING NUCLEAR WEAPONS: THE WILL OF THE PEOPLE OF INDEPENDENT KAZAKHSTAN

The enormous map of the Soviet Union, spreading its borders across the Eurasian expanse, is dotted with tiny cities in which the greatest variety of people live and work with a multitude of fates and professions. This is a map of peaceful cities, towns, and administrative units. There are cities that are not indicated on such maps – not because they are too small and insignificant but because they belonged to the so-called military-industrial complex, the "state within a state".

These special cities were missing from more than maps. The majority of the civilian population of the Soviet Union did not suspect that they even existed. Residents of those cities, when they traveled outside their city limits, said that they were from Arzamas, even though they actually lived in Arzamas-16, or from Chelyabinsk, even though they actually had been born, lived, and worked in Chelyabinsk-7. And so on.

When the Earth Cried Out

On August 21, 1947, the government of the U.S.S.R. passed a special resolution for the creation of yet another such secret city with the code name Semipalatinsk-21. The city was created as a complete dimension of the military-industrial complex – the nuclear test site. In view of the unprecedented scope of the plan, the test site was allotted almost 18,000 square kilometers of the neighboring pastures, meadows, and mountains.

I noticed long ago that the more a nation suffers on its path to freedom and independence, the more disposed it is to compassion and sympathy. The Kazaks have a proverb: "If you want to feel another's wounds, get inside his soul". How can you feel

all the pain of the earth, which suffered hundreds upon hundreds of nuclear and thermonuclear wounds, if you don't try to put yourself in its place, if you don't try to look with the earth's eyes at everything that happened?

The ancient prairie steppes of the Chingiz are a land that gave birth to the conscience of the kazakh nation... Abai the Great, Shakarim Kudaibergenov, Mukhtar Auezov. This was the land that had once been the epicenter of steppe wisdom and human spirit that did not know borders and distances. Here is one of the sources of our statehood. Here Abylai Khan had ruled. Yellow grasses and alert weasels, scurrying about from generation to generation, observe the measured life of the steppes. Proud eagles soared in the blue, looking down for careless hamsters and steppe voles. The majestic hoopoes paced and the tiny steppe kangaroos – jerboas – zigzagged in bizarre patterns. Salt marshes untouched by time with a few surviving lakes and the sloping mountain ranges of Degelan and Zhangyztau were interrupted by extended sand dunes – the majestic Kahn Peak, chief of the multifold Shyngyss Mountains. This was a land that preserves all the secrets of the nomadic life and the echoes of long-gone events that took place on the great Eurasian steppes, not far away from the mysterious Altai Mountains and ancient Bayan-Aul.

Along these elevated plateaus the descendants of Dazhngar moved south to conquer kazakh land, the soldiers of the ruthless generals Subudei-bagatur and Jebe-noion marched to the west, the Shakers of the Universe hurried to Bolshoi Kurultai, the great *batyrs* and simple *sarbazyatyrs* of the kazakh tribes shed their blood, the undespairing and witty *akyns*, or bards, created their oral legends, and the wise white-bearded beys held judgment.

Semei, the kazakh land, lay down to rest and spent the last century in deep sleep, exhausted by the stormy course of historical events. With the creation of Semipalatinsk-21, Semei was

awakened, and awakened rudely by thousands of heavy trucks and caterpillar tracks, by the tramp of thousands of iron-tipped boots and the gentle rustle of rubber soles. The steppe froze in tense anticipation. Would these people bring the old life back? Would the long-forgotten neigh of steeds in battle and the clank of steel be heard again? Apparently the newcomers had arrived with peaceful intentions. They merely built an iron hill and placed a heavy metal coffin on top of it: apparently they were planning to honor some great and courageous *batyr*. The earth and the steppe inhabitants sighed and returned to their own thoughts and concerns.

At exactly 7 a.m. on August 29, 1949, a fiery ball, growing with intense speed, burst into the body of the earth, seared it, and awesomely flew up above the world, as if intending to replace the Sun. Behind the fireball a column arose, emitting a monstrous power and blinding glow of burning ash and steam from the vanished flesh of the steppe. The burning smell of the earth's crust was carried by an artificial wind as if announcing the approach of an unknown and ruthless enemy.

The people living in far-flung auls and small farmsteads, stunned by the tremors that shook the earth and the bright light in the sky, ran outside, silently staring at the horizon, where contrary to all human logic and experience, a second sun burned and faded before their eyes.

It was all over. The steppe was scorched, without vegetation, ashen. Blind eagles, like newborn chicks, limped aimlessly across the steppe. Corpses of rodents, foxes, and wolves- dead lizards, just seconds ago green and swift. In their death throes came the mute question, addressed to no one in particular, "Why?" The people, stunned and confused, were still numb, unable to answer their own question: *"Ol ne?"* (What is this?) The vision made them stop in a minute of silence, as if, without even knowing it, they were honoring the memory of the blessed days

of the steppe and mountain slopes when they flourished and were filled with life, days that might never return.

The newcomers called that hell an above-ground test detonation of plutonium charge RDS-1 (demonstration warhead) on teaching test site No. 2, known as the Semipalatinsk nuclear test site. That was first detonation of an atom bomb in the U.S.S.R.

At the test site, behind cover, Lavrenti Beria, Sergei Kurchatov, generals and scientists – the many ideological, creative, and technological fathers of the Soviet A-bomb – watched the birth of the new deadly star. What were these people thinking as they watched the horrible picture of a nuclear explosion? Did they think about the consequences of nuclear testing? What they would bring the people of Kazakhstan?

A long time ago I pondered why the nuclear test site was set up on Semipalatinsk land. When they say that at the time this was the least populated region of the Soviet Union that was still close to the main communication lines, I ask: what is the number of people who can be sacrificed out of those considerations? Can even one human life be worth less than the need to economize on a few hundred kilometers of railroad track? How can we talk of morality when this economic approach is acceptable?

The Soviet Union had dozens of completely unpopulated areas, places where man had never trod. Could they not have found an "ideal" spot, without any human habitation for a radius of 500 kilometers? How could they select a site that was only 150 kilometers from a regional capital with a population of several hundred thousand people, not to mention the numerous auls and hamlets located much closer to the test site. Yet after the end of World War II, the Soviet leadership set as its main military goal the breaking of the U.S. monopoly on atomic weapons. Uncounted material and human resources were spent on achieving that goal. Today I realize the several hundred thousand human

lives could not have stopped the regime that was used to treating its people like a renewable and cheap resource. A regime that destroyed millions of its own citizens in the fires of the repression of the 1930s would never have taken into account the life and health of a few hundred thousand people living within the radius of the test site's activity. They were consciously sacrificed to the state's military and political interests.

And what did the people living in Eastern Kazakhstan get as a result of the nuclear tests? Radioactive fallout from the first atomic explosion covered all the inhabited areas of the region. Residents of the closest auls, who didn't have the slightest idea of what was happening at the military site located near them, were subjected to gigantic doses of radiation. The populace had not been warned about the tests.

Later, the military tried to justify what had happened by saying that they had originally underestimated the harmful effects of radiation on humans. They pled that the scientists and military working at the test site did research themselves in the hole left in the epicenter of the nuclear explosion, using tools contaminated by radioactive fallout. Many of them paid with their lives for that. However, does even that justification satisfy the people who lost not only their own good health but also inadvertently passed on their disease to their children and grandchildren? They began warning people about nuclear explosion only in 1953. Still fighting "yesterday's war", the army developed a pathetic defense system that called for a temporary evacuation of people and animals from the fallout area, hiding them in primitive shelters – dugouts and trenches. However, once the detonations were over, the people were returned to their homes in the contaminated areas.

With Burning Nuclear Iron

The arms race carousel began spinning at full speed. The number of test explosions at the site and their yield increased every year. But the enemies of the East and West could no longer impress one another by having the bomb. The only way to frighten and impress was through a greater, unimaginable force of the next nuclear bomb.

First to stun the world were the Americans, who created the "two-step" nuclear device using the design of Stanislav Ulam and Edward Teller. Almost seven meters tall and weighing just less than 100 tons, thermonuclear "Mike" looked more like a factory installation than a bomb. On November 1, 1952, "Mike's" thermonuclear explosion, 500 times more powerful than "Tiny", which was dropped on Hiroshima, practically destroyed a coral atoll in the southern Pacific Ocean.

Soviet developers of a super powerful weapon took another path. Andrei Sakharov and Alexander Ginzburg proposed a variant of the so-called Sloyka hydrogen bomb, which provided an original solution to the problem of necessary pressure to create the fission reaction of light nuclei.

The bomb was much more modest in yield than the American version and was *only* 20 times greater than the TNT equivalent of the Hiroshima atom bomb. Nevertheless, on August 12, 1953, the region around the Semipalatinsk test site was shaken by an unprecedentedly powerful explosion of the nuclear hydrogen device known as RDS-6, with a 480-kiloton yield. The mushroom cloud of hot radioactive gases that followed the detonation reached a height of 16 kilometers! After that explosion the steppe grasses for dozens of kilometers around glowed light blue for several days. In Semipalatinsk (approximately 150 kilometers away) the shock wave shattered the glass in windows and some buildings developed cracks in the walls. Later, when

the peaceful residents of area villages were allowed to return to their homes, many found their houses either completely destroyed or with deep fissures in the walls. And the bitter irony is that this was truly the most "peaceful" detonation of all the nuclear explosions.

However, the "perfection" of the Soviet nuclear bomb did not stop here. With incredible speed the U.S.S.R. created a hydrogen bomb that in its structure was an exact copy of the American two-step scheme, but was more powerful.

On November 22, 1955, the military bomber TU-16A flew over the Semipalatinsk test site and dropped the newly created super-powerful thermonuclear charge device RDS-37 with a force of 1.7 megatons.

The bomb detonated at a height of a kilometer and a half. The shock wave and the trembling of the earth from the explosion were felt almost throughout the entire territory of Kazakhstan and contiguous regions in Russia. I probably don't need to talk about the feelings of the people who lived near the test site once they experienced this thermonuclear explosion, so much more powerful than anything before. This is how the nuclear arms race began, creating the global nuclear standoff of the two superpowers.

The power of the hydrogen bombs and the number of tests of nuclear weapons continued to grow. But so did the understanding that the Semipalatinsk nuclear test site was not suitable for testing powerful thermonuclear bombs, and they were moved above the Arctic Circle to a test site located on the island of Novaya Zemlya. And not a moment too soon.

Here is how one of the researchers described the effect of a 50-megaton Soviet thermonuclear bomb:

All of a sudden we saw a bright explosion of light that did in fact seem brighter than not a thousand but a million suns! Even though we were 250 kilometers from the epicenter, we were

liter ally blinded and felt the heat, as if from a gigantic oven... The hot ball of nuclear clouds rose to a height of 70 kilometers and was then carried north by the wind.

The description is so vivid that I could only breathe a sigh of relief: Thank God that they did not test that nightmare in our Eastern Kazakhstan! For the city of Semipalatinsk would have been 100 kilometers closer than this observer.

The total number of tests at the Semipalatinsk test site was 456 nuclear and thermonuclear detonations. Of them, 116 were open, that is, above ground or in the air. According to kazakh scientists, the sum total force of the nuclear explosions at the Semipalatinsk test site in the atmosphere and the earth's surface is 2,500 times greater than the atom bomb dropped on Hiroshima in 1945. It is hard to find the words to characterize the monstrous damage done to the environment and the health of the population of Kazakhstan.

The consequences of above-ground and air nuclear explosions were terrible. In the mid-1950s it became obvious that above ground testing could not be continued. The United States was first to realize this. The Americans switched to underground nuclear testing by the end of the 1950s: the first underground detonation of a nuclear bomb, under code name "Rainer" and with a force yield of 1.7 kilotons, took place in September 1957 in Nevada.

The Soviet Union came to underground testing five years later, in 1963. However, hiding nuclear explosions underground merely concealed the negative effect on the environment. In the period from 1962 to 1989 there were 340 explosions in the underground shafts of Mount Degelen on the Semipalatinsk test site. Each year there were 14 to 18 nuclear tests. As a result of these explosions, Mount Degelen, which was composed of cliff minerals, turned into a mound of rubble.

Despite the assurances of the army, underground nuclear testing was not "absolutely harmless" for the environment. Al-

most one out of three underground tests was accompanied by leaks of radioactive gases through cracks and fissures created by the explosions. One of the last such incidents occurred in the late 1980s. It was widely publicized and elicited a storm of public wrath. On February 12, 1989, a planned nuclear test took place at the test site. A nuclear device with a charge of over 70 kilotons was detonated in a gallery. The explosion caused cracks in the earth's surface that allowed radioactive gasses to escape for two days. The radioactive cloud that formed was several dozen kilometers wide and covered a territory in which more than 30,000 people lived. The background radiation in that zone reached 3,000 to 4,000 micro roentgens. That is almost 200 times the natural background radiation, which in normal conditions is only 15 to 20 micro roentgens an hour. As was later learned, such incidents occurred regularly at the test site. In 1987 the stream of radioactive gasses caused by explosions reached Semipalatinsk six times and in 1988, twice.

Today not everyone yet knows that the nuclear tests at the Semipalatinsk test site were only the tip of the iceberg of the problem of radioactive contamination of the territory of Kazakhstan. In various years atomic explosions thundered in almost every corner of the republic. Besides the Semipalatinsk test site, which became well known, there was the Azgir test site on the border of the Atyrau and Zapadno-Kazakhstan oblasts. Starting in 1965, a series of 26 underground nuclear detonations were carried out in Western Kazakhstan for industrial purposes.

On the whole, the practice of industrial underground nuclear explosions, used to form large-diameter internal spaces, was rather widespread in those years in the U.S.S.R. And it must be noted, without great success. In particular, in the period from 1980 to 1984 in Russia, 15 underground nuclear explosions were made at the Astrakhan Gas-condensing Deposit. Analogous explosions were detonated at the Osinsky and Grichevsky

deposits. However, by 1986, the majority of geological formations created by nuclear explosions collapsed through flooding, natural erosion processes, and tectonic shifts.

According to specialists, the nuclear detonations in the salt domes of Western Kazakhstan had a series of deleterious consequences: melting of contaminated salt that later rose to the surface, and radioactive contamination of the territory and underground waters. Besides this, in the region of the Azgir test site where the nuclear explosions were made underground, free chlorine and hydrogen were released to the surface and formed hydrochloric acid. The hydrochloric acid hung suspended over the earth in the form of toxic "white fogs".

In 1992 the sanitation-epidemiological services of the Republic of Kazakhstan examined the launch pads of the Azgir test site and determined areas of significant radioactive contamination in the area.

A few underground spaces created by the nuclear explosions were filled with radioactive water, which could leach into the aquifer used for drinking water. The radiation level on the surface of the land at the test site was as high as 3,500 micro roentgens per hour, which was 150 times the natural background radiation that is not dangerous to human health.

The inhabitants of areas next to the Azgir test site had not been informed about the radiation danger. There were even cases of kolkhoz (communal farm) fields being situated just a few hundred meters from sources of powerful radioactive radiation. These regions had mass incidents of illness and a collapse of domestic and wild animals with symptoms characteristic of radiation sickness. The incidence of death from cancer was very high among the inhabitants of areas near the test site.

And still, there were other test sites and areas where nuclear devices were detonated besides Semipalatinsk and Azgir – such as Taisongana, Urda, and Zhangala.

Often when I speak with people, some kazakhs, especially residents of Semipalatinsk Oblast, ask me a question that directly affects their life and lifestyle. "Nursultan Abishevich! Please tell us, how can it be so? The Americans in their Nevada also do testing, even more than we do. Why aren't there demonstrations against them and why is their ecological situation, as far as we know, much better?"

I have no pat replies and my answers vary. But the point is always the same. Yes, the Americans performed many more tests at their nuclear test site in Nevada than we did. And the residents of the state of Nevada do not seem to express excessive displeasure. Every year the U.S. federal budget pays the state of Nevada an average of $ 1 billion in compensation. I repeat $1 billion annually. And all that money goes directly toward liquidating the negative effects of atomic explosions – in particular, the recultivation of lands, medical and sanitation examinations, re-creation of the biosphere, and so on. I am far from justifying nuclear testing in Nevada. I am certain that no amount of compensation can solve the problems of long-term ecological consequences. But this is for the Americans to think about. Kazakhstan has solved the issue for itself once and for all.

For all the years of testing, between 1949 and 1991, Soviet leadership unfortunately had no particular desire, nor adequate funding to compensate the damage wrought by the Semipalatinsk nuclear test site. The Soviet federal budget did not have a budget line for this – at least, nothing comparable to the American compensation.

The times were not just different when the nuclear tests were done. The times were cruel. No one expressed indignation over the earthquakes from the explosions or after seeing a second sun in the middle of the day. There was no talk of strikes or protests. The favorite method for taming difficult citizens was the psychiatric hospital.

The leadership of the former U.S.S.R. ran its tests without consulting not only the population, but even the administrative leaders of Kazakhstan. After all, the leaders of the Kazakh Soviet Socialist Republic were simply appointed and removed by Moscow. Exceptional obedience to orders from Moscow was the only way to keep your post. This really was a silence of the lambs.

Today the decades-long silence is broken. People talk of lost health and the terrible ecological blow. The young independent state has been left alone to face the catastrophe, and all the people's complaints are addressed to the new state. But in the greater scheme of things, it is not the fault of Kazakhstan. To whom should they turn for compensation? To the military-industrial complex of a nonexistent country? To the world community? Let's be frank: trying to get a response, except for a few focused projects, from the world community to solve this ecological catastrophe has been unsuccessful.

As we acquired our independence, we immediately began government programs to rehabilitate the victims of nuclear testing and the population of regions contiguous with the Semipalatinsk nuclear test site. But despite all the measures we have adopted, it is not easy for Kazakhstan alone to correct what was done by the concerted efforts of the entire Soviet Union.

Consequences for the Population

The press occasionally prints insinuations suggesting that the army, in running above-ground, air, and underground tests of nuclear and hydrogen weapons, was not aware of the catastrophic consequences for the environment and the civilian population living nearby. They say they were merely carrying out orders in the name of higher interests. And this gives us the leitmotif we see in the newspaper articles, "Forgive them, for they

know not what they do". That is not true. They knew about the destructive consequences of testing and the negative effect of radioactivity – especially after the atomic bombing of Hiroshima and Nagasaki. This is evidenced by the numerous medical, ecological and geophysical data and eyewitness accounts of these tragedies. The famous Japanese atomic physicist Oushio Nishina, a student of Neils Bohr, experienced the consequences of a nuclear explosion personally when he came to a destroyed Hiroshima the day after the bomb was dropped. After just a few days of working in the city's rubble his entire body was covered with ulcers that brought him great pain. A true scientist and pragmatist, he concluded that this was the effect of radioactivity that remained after the detonation. He proved convincingly that the danger lay not only in the explosion but in its aftereffects too. Evidence of this came from medical reports from Japanese doctors studying the ruins of Hiroshima and Nagasaki.

As for Nishina, I did not mention him lightly. He was a major scientist of the prewar period. In contemporary atomic and nuclear physics, the Klein-Nishina formula is well known. A student of Bohr, Nishina actively worked on the problem of nuclear reactions including fission. But World War II put Japanese scientists on the opposite side of the barricades from the world scientific community. Looking at the ruins of a familiar city and the burned bodies of his fellow citizens, he contemplated the unthinkable: could this be connected with his own scientific work? Could this be the atomic bomb that we all spoke about just a few years ago as something unreal and fantastic? I think we cannot miss the allegorical element here: one of the creators face to face with his creation.

Back in 1957, Mukhtar Auezov spoke of the destructive consequences of the first above-ground nuclear tests, addressing the International Conference on Banning Atomic and Hydrogen Bombs, held in the capital of Japan. He spoke of the ills that

had befallen his homeland, the ancient Semipalatinsk land, because of the atomic test site – of the hundreds of people dying of strange diseases and the hundreds of mothers giving birth to mutants.

In general, when speaking of the consequences of nuclear testing in Kazakhstan, one cannot overlook the fact that in the former Soviet Union the examination of this issue was probably one of the dirtiest episodes in the relations between the leaders of the military-industrial complex and the Kazakhstani public. For it was in this issue that the true face of the Soviet system and the union relationships was revealed – in the condescending and occasionally careless attitude of the metropolis to the needs and problems of the semi-colonial republics – the raw material suppliers of the Soviet Union.

It is not a secret now what damage to the environment is wreaked by the testing of nuclear arms. It means thousands of "atomic" soldiers, literally living corpses, and civilians who were subjected to nuclear bombing in the Semipalatinsk Oblast and other areas. And of course, the citizens of Semipalatinsk itself, just 150 kilometers away, which was bombed just under 500 times for several decades in peacetime. Some may be horrified that hundreds of nuclear detonations were made so close to large towns. Others may just shrug and talk about "absolute safety": after all, it was only 456 tests at a huge distance from the nearest town.

Well, in the final analysis, both points of view depend on one's moral scale of human values. Andrei Sakharov spoke very clearly to this point: "No matter where on earth a one megaton nuclear device is detonated, it will eventually take the lives of thousands of people". He knew perfectly well that the greatest danger was not the place but the very fact of an atomic or hydrogen bomb detonation. The violation of the ecosystem will sooner or later lead to the worst consequences.

The total force of nuclear devices exploded on the territory of Kazakhstan is beyond the calculation even of specialists. It is probably impossible to get a precise picture of the enormous damage those bombs did to the country's biosphere. However, it is clear that the general ecological situation in the republic as a result of the numerous nuclear explosions is approaching catastrophic.

The republic commission on observing the state of the ecology in areas of nuclear testing, which I established in March 1989, ran a series of tests and analyses and concluded that the terrible damage will not be limited to the people living today, but will extend for many generations.

The first accurate and systematic data on the deleterious effects of the testing at the Semipalatinsk test site were obtained after wide-scale medical and ecological research done by the Academy of Sciences of the Kazakh SSR. The research and the expeditions were headed by Professor B. Atchabarov. The expedition did research on the effects of radiation on humans and animals. The studies were done in the Abai, Beskaragai, and Chubartau regions of the Semipalatinsk Oblast. In every region they produced exhaustive data on the destructive and irreversible effects of nuclear explosions on the physiological and mental health of the people and on the condition of the environment. Medical science on radiation pathology was given a new term: "Kainar syndrome", or as it was later known, the "Atchabarov-Balmukhanov syndrome".

The mechanism of the effect of radiation on humans has been thoroughly documented by now. It is known for sure that radiation has a multiple character. The most dangerous aspect is the effect of ionizing radiation leading to irreversible changes in the genetic code. This has a negative effect on congenital characteristics. Genetic changes caused by radiation exposure are passed on to children, grandchildren, and even more distant descendants.

In the region of the Semipalatinsk test site, there are three zones of elevated radioactivity that specialists have determined by territorial signs. The first circle is the zone of extreme and maximal radioactive effect, with a total exposure dose of 35 to 200 sZv covering the territory of Abai, Abrali, Veskaragai, and Zhansemei regions of the Semipalatinsk Oblast. The second circle is the zone of elevated radiation risk, with a total exposure dose equal to 10 to 325 sZv and covers the city of Semipalatinsk and several regional centers of the oblast. The third circle is the zone of minimal radiation risk, with a total exposure dose of up to 10 sZv, which includes the rest of the population of Semipalatinsk Oblast that is not in the first two zones. Of course, this is a provisional division. In making up a radiation map of the effects of fallout from the Semipalatinsk test site, it is important to take many geophysical and geographical factors into account: the anomalous distribution of fallout zones, the presence of radioactive danger in other oblasts in particular, Pavlodar Oblast and Altai Territory. And of course, there are also the regions that were covered with radioactive clouds with every incident of fallout.

Unfortunately, there is still no complete and full-scale radioactive map of Kazakhstan and the regions next to the test site. Many of our kazakh specialists are working on it. But there is a lot of data on these three zones, and it shows the significant effect of the experimental explosions on the ecological situation in the regions around the Semipalatinsk test site.

Beginning with the first above-ground explosions in 1949, we observe a steady growth of disease among the residents of the Semipalatinsk and Pavlodar oblasts, Altai Territory, and other territories exposed to radiation many times – diseases such as lung and breast cancers, lymphohemoblastosis, and many other malignant pathologies. On the whole, the number of cancer cases has tripled since the testing began. Even in the year 2000, the general level of new cancer cases in the regions near the test site is still 38 percent higher than the average for Kazakhstan.

In those regions near the Semipalatinsk test site there is a particularly high incidence of children born with various developmental anomalies and physical and mental handicaps. The effects on human reproduction in those regions are simply catastrophic. This is manifest in many cases of miscarriages, premature births, and difficult births. The specialists say that they are related to genetic mutations caused by short-term and residual radiation. The number of children born with mental retardation in the region of the test site is 3.5 times higher than the republic average – particularly the severest forms of mental retardation, for instance, oligophrenia.

Experts define short-term radiation as radiation that appears directly at the moment of detonation. Residual radiation is radioactive matter that does not take part in the process of splitting during the explosion. After the explosion a certain part of the radioactive matter remains in its former state and precipitates into the ground, soil, and water. With every explosion, the amount of residual radioactive matter increases.

What is the tragedy of Chernobyl? The accident at the atomic station was not an explosion of high-grade uranium, but its expulsion. That is, the uranium was not destroyed, but remained in the same extremely radioactive state and partially "crept" out through the reactor's belly. The artificial metal cylinder was no longer the reactor, but the natural world around it – nature itself became the reactor! That is why this accident had such destructive aftereffects.

The experts did their calculations and have found that the amount of radioactive matter accumulated in the environment after the nuclear explosions in Semipalatinsk is greater than the matter expelled from the Chernobyl atomic reactor. Some scientists say that in that sense, Semipalatinsk is equal to at least two Chernobyls.

The danger of residual radiation, both in the case of Chernobyl and Semipalatinsk, is clearly obvious and unpredictable in

its negative consequences. The effect is constant and has a tendency to amass negative influences. Since the test site was shut down, the effect of residual radioactivity has led to a five-fold increase in congenital pathologies – that is, by 500 percent!

The destructive effect of radiation on human health may be the most important side of the atomic coin, but it is not the only one. It is not only people who suffer, but the land itself. The accumulation of radionuclides year after year leads to a decrease in agricultural yields. Soil contains an enormous amount of microelements: iron, copper, magnesium, and others. Our bodies need them and they reach us through the consumption of grains. We get as much as we need. But radioactive plutonium, which lands in the soil with every explosion, causes changes in the soil's chemical composition. The concentration of plutonium in the soil of some areas exceeds the maximum permissible standard by hundreds of times. Plutonium reacts with iron ions and forms new radioactive elements that permeate all the soil. As a result, the fertility of the topsoil suffers, and the human body gets more and more radioactive molecules and fewer and fewer needed microelements. Plutonium has a half-life, during which its amount decreases exponentially. And for all that time, it will have a constant negative contaminating effect on the topsoil and its fertility. According to specialists, it will take at least 300 years for the soil to recover its productive potential.

As head of state, I have extremely negative associations toward "scientific" publications made for hire by writers who do not tie the catastrophic situation of the ecology and health in the radiated regions with the effect of above-ground, atmospheric, and underground testing.

Beginning with the early days of nuclear arms testing, a vast amount of statistical, medical, and ecological data has been collected, data of radio ecological effects in particular. Professor I. Ya. Chasnikov is a leader in this field, gathering a large amount

of data on the negative radioactive effect of the test site on the environment.

I have said on more than one occasion that the end of testing and the removal of nuclear weapons from Kazakhstan do not remove the collective responsibility of nuclear powers for the suffering and pain of the local inhabitants caused by aboveground, atmospheric, and underground explosions. On June 23, 1997, I addressed the Twenty-First Special Session of the General Assembly of the United Nations with a proposal to create a Special International Foundation for the Rehabilitation of Human Health and Environment for countries that experienced nuclear arms testing.

But the principle I espoused of "materialization of collective responsibility" revealed a certain unpreparedness of the nuclear powers to shoulder their part in preserving the ecology of the planet battered by thousands of nuclear and thermonuclear explosions. Nevertheless, the General Assembly of the United Nations passed Resolution No. 52/169, which calls for international aid for contaminated regions.

However, Kazakhstan is still forced to work alone in solving the problem we inherited of radioactive contamination of our territory. Up to the present time, the total financial help sent to our affected regions is only $20 million. And most of that came from Japan, which itself is a victim of atomic bombing.

The Will of the People: "No" to Nuclear Arms

The psychological rejection of nuclear arms by all of the people in Kazakhstan, especially the kazakhs, was not just the result of the catastrophic aftereffects of testing and the potential problems arising if they remained in our lands. It was a manifestation of the profoundly peace-loving nature of the kazakh people and the absence of artificial and innate aggression in them. They

prefer to live with nature rather than fight it – to give nature its own space instead of conquering it – to become one with the steppes, mountains, valleys, and lakes instead of leveling them.

Here I want to mention a purely national trait in the world-view of the kazakhs, which comes from their gradually forgotten nomadic culture. This unique quality is part of the attitude of all nomadic peoples toward the earth, toward the earth of their ancestors – Atameken. In our hearts, in our perceptions, and even in our oral epic tradition, we kazakhs anthropomorphize in the most natural and sincere way every particle of the world around us, imbuing it with spirit and soul. While other nationalities may associate man with nature, we do the reverse – we associate nature with man. We are not part of nature, nature is a particle of our souls. In our poetic and metaphoric perception, stones, mountains, grasses, rivers, and beasts could speak and communicate with us, and they had wholly human qualities. They were always just the way we wanted to see them. They were mean and kind, happy and sad, born for joy and died from grief.

We kazakhs have a concept called *"uzun-kulak"*, which means "fast ear". We use it to describe how quickly news travels across the endless steppe, sometimes faster than the messengers sent to bring news to others. A young messenger gallops into an aul on his sweating steed in the hopes of being the first to convey a steppe sensation and perhaps get some *suiyunshi.* And in response the white-bearded elders, squinting slyly, say with a laugh, "Hey, you young fool. You exhausted your horse to surprise us with news that only a newborn doesn't know already?" And then they would add details that would prove to the disappointed messenger that they were not joking. Our ancestors believed that news was carried not by messengers or caravans but by the earth itself. The steppe, hearing a bit of news with its giant ear, would immediately tell it to all its inhabitants. It's easy for the steppe to do that, and we believe it.

I'm not talking about some mechanical harmony or idyll with nature – it's just that we feel an absolute spiritual and mental oneness with the attributes of our once-nomadic life.

The most important place in our lives belongs to the land, the steppe that feeds us and thanks to which we exist. Anything that violates that organic spiritual unity, the unity of man and land, violates our entire lifestyle and does not have the right to exist.

At some point we suddenly realized that we were losing that barely perceptible, almost mystical tie to the land, which, dug up by the monstrous nuclear explosions, was moaning and twitching beneath us. It literally moaned and twitched.

I recall the period of my life when we lived in Karaganda. In those days we seemed to live in our own organic space; there were limits and borders we could not cross. Those were the rules and habits of our life. We were not allowed to learn the terrible details of many things, including nuclear testing. But even without knowing the details, we had the general picture. After yet another weak but palpable tremor that shook the chandeliers and made the furniture creak, my daughters would run in to the room, their eyes wide with childish fear, shouting, "Papa! Papa! It's an earthquake!" We adults would immediately call relatives in Almaty. Voices trembling with anxiety and expectation of bad news, we would ask, "What's going on there?"

And we would learn that our fears and anxieties were in vain. The children would exchange a look full of doubt and run out to discuss the unusual event with their friends. Gradually, we stopped calling Almaty after a quake. We began to accept every new "earthquake" as a part of our "Soviet reality". I dare not guess the emotions and physical sensations of the people living much closer to the epicenter of the "earthquakes" that happened with remarkable regularity several times a year. As the kazakh proverb puts it, "The weight of a stone is felt by the land onto which it falls".

Our hostility, even revulsion, for nuclear arms is understandable. We reject with every fiber of our being the nuclear arms that violated our sense of spiritual unity and sense of mental community with nature. Merely understanding and feeling that national identification with nature is enough to come to the only possible decision: "No to a nuclear Kazakhstan!"

Yes, the hundreds of nuclear tests brought innumerable ills to Kazakhstan's people, and I remember those dramatic days when we learned all the truth about the test site and understood the danger of invisible and inexorable death. The progressive segments of society and all the people of what was then still the Kazakh SSR literally stuck in the craw of the huge and powerful military-industrial complex of the Soviet Union by opposing the testing.

Right up until the start of the fragmented rumors about the dangers of radiation and the unhealthy atmosphere in Semipalatinsk, many people who lived at some distance from the Semipalatinsk explosions showed no particular concern about the "invisible" danger from radioactivity. Lack of knowledge and information about the deadly effects of nuclear testing, imposed by the central government and by the military, left its mark. Residents of Semipalatinsk, Altai Territory, Pavlodar Oblast, and other inhabited areas continued to live and work, develop strange diseases, and die with the "right" diagnoses. The piles of classified documents and evidence about medical anomalies, mutations, and defects in people exposed to radiation were sent straight to Moscow for "further study and analysis".

But the truth about the Semipalatinsk test site gradually came to the fore. All residents of Kazakhstan, young and old, came to take a lively and unfeigned interest in issues that had not previously concerned them. Rumors accreted details, conjecture and fantasy went beyond all limits, and the most incredible tales were told about the Semipalatinsk Zone and local Stalkers (from

the science fiction novella *Roadside Picnic* by the Strugatsky brothers).

In those years whenever I met with people, I was showered with questions:

Nursultan Abishevich! Is it true that Semipalatinsk will fall through the earth because of the test site?

All my relatives in the village of Sarzhal near Semipalatinsk are sick. Is it the radiation?

They told us that underground explosions weren't dangerous. That's not true?

What will happen now? Is radiation dangerous or not? We live in Almaty – will anything happen to us?

The questions were sometimes naive, sometimes panicky, and often mistrustful, as if the whole issue had been blown out of proportion. People were worried for themselves, their friends, and relatives. The tension was mounting, and even though it did not reach open panic, the anxiety hung in the air. The people demanded the truth and nothing but the truth.

This affected me directly both as Chairman of the Council of Ministers of the Kazakh SSR and as a deputy of the Supreme Council of the U.S.S.R. But all my questions addressed to the appropriate agencies and offices of the military were answered either by a note acknowledging receipt or by a standard form:

Dear Nursultan Abishevich,

In response to your question regarding the activity of the Semipalatinsk Test Site in the city of Kurchatov dated such-and-such, we inform you that according to existing data, there is no confirmation of any negative impact on the health of the civilian population living near the site nor on the ecology...

And this almost 50 years after the tragedies of Hiroshima and Nagasaki and just a few years after the catastrophe in Chernobyl! The meaningless replies and the atmosphere of total indifference to this problem on the part of responsible military brass

and bureaucrats made me worry even more about the lack of information about the true situation at the test site. My anxiety made itself manifest in my speeches, even in those that were on seemingly totally different subjects.

On May 30, 1989, as a deputy of the Supreme Council of the U.S.S.R. from the Almatinsk-Illisk Territorial Electoral District, I had occasion to speak from the podium of the Soviet Union's highest legislative body. I had much to say, and the rules of order were strict. Mikhail Sergeyevich Gorbachev, who was chairing the congress, watched closely and warily, his eyeglasses glinting in the lights: Glasnost may have been proclaimed but moderation had to be observed. The rules of order. Rising from my seat, I wondered if I would manage to say everything, especially the most important part.

I can't say for sure what I was feeling, whether I was afraid or not, but as I walked down the aisle toward the podium of that august assemblage with my "seditious" intentions, that episode came to mind.

While I was speaking, I sensed a ripple of animation in the audience right after I said,

I want to talk about the Semipalatinsk test site, which has been in operation since 1949 and which begun with explosions in the atmosphere. The populace in the region since those times has quadrupled. But the military is trying to persuade us that nuclear testing is practically beneficial for human health. We understand that it is a state necessity today. But there must be a real, profound analysis of the effects of atomic explosions on the environment and the results must be told to the people. Not to mention certain expenditures provided for the improvement of the life of people who live there.

The agitation came from the people's deputies, particularly those in military uniform, who made up a good fourth of the audience. It was as if something had changed slightly.

What that change was I learned only after my speech and the other speakers had finished. It was a change in attitude. An attack on the country's main strategic object! Off they went. The things that were said in the corridors! That I was washing dirty laundry in public, making political hay, that I had sold out (no explanation of to whom), and finally, the most "serious" charge – that I was undermining the defense capability of our state. Do you remember Mark Twain's story "How I Ran for Governor"?

The army men kept insisting that underground nuclear testing was not hazardous to the population. The prospect of ceasing testing and shutting down the Semipalatinsk test site was a nightmare for the U.S.S.R.'s top generals. I recall that now with a smile, but back then, to tell the truth, it was no laughing matter.

But I hold no grudges against anyone, of course, for we are all children of our times. As they say, existence determined our consciousness.

And at that time, in the first months of 1989, our Kazakhstani people, dreaming of washing the "nuclear" dirt out of the laundry, rose up against the Test Site of Death. The elemental dissatisfaction gradually took organized form. On February 28, 1989, after the news of radioactive fallout after an unsuccessfully done underground nuclear explosion at the Semipalatinsk nuclear test site, a protest rally was held outside the House of Writers. This was the start of the Nevada – Semei international antinuclear movement, headed by the world-famous poet and public figure Olzhas Suleimenov. The movement united scientists, writers, white collar and blue collar workers and many other people of every age, and it made an enormous contribution to the struggle for shutting down the Semipalatinsk test site and halting the activity of other test sites around the world. Olzhas Suleimenov's personal contribution to the antinuclear movement is great. Other public groups like Physicians for the Prevention of Nuclear War, the Next Stop youth organization and many others expressed the interests of the non-nuclear community.

On April 22, 1990, the Supreme Council elected me as the first President of Kazakhstan. I consider holding the conference Electors of Peace Against Nuclear Arms (May 24, 1990, in Almaty) one of the first major political acts of my presidency. It lasted three days. Besides antinuclear activists from all parts of Kazakhstan, there were delegations from almost 30 countries around the world. It was a major event of world significance. They talked about everything: aid to victims, a ban on nuclear testing, disarmament, and control over nuclear weapons. It seemed that the very air of our country was filled with slogans like: "Enter the XXI century Without Nuclear Weapons", "No to Nuclear War", "No to Nuclear Testing", and "We Are for a Non-nuclear World!"

The general mood turned into a peace march that traveled the streets of Almaty. There was a rally at the Central Stadium, where thousands of residents of the capital and participants in the conference gathered. Many Almatyns attended the conference meetings and talked with public figures who spoke out against test sites and atomic weapons. The entire country watched national television, spellbound by the Semipalatinsk-Hiroshima telebridge, which was later rebroadcast throughout the Soviet Union. There were white paper origami cranes made by children in the streets of our lovely Almaty, and white ribbons were tied to trees to commemorate the victims of Hiroshima and Nagasaki. It was an unforgettable time!

In Semipalatinsk Oblast, in the ancient homeland of Abai in the regional center of Kara-aul, the thousands of participants in a rally organized by the antinuclear movement Nevada – Semei each placed a single stone and created a small hill. Next to the Kara-aul mountains, near which the great Abai passed his childhood years, there appeared an artificial stone mountain. It was certainly much smaller, but it was greater in the strength of its indignation and national wrath over the defilement of sites that are sacred to every kazakh.

The Karaganda miners were not indifferent, either. One hundred thirty thousand miners signed petitions to ban nuclear testing and shut down the Semipalatinsk test site. People made impromptu speeches releasing the fear and silence that had accumulated over all those years when we just waited for atomic rain in our cities and villages. People wanted an end to that long "Cold War". All of Kazakhstan, all its people, were caught up in a single goal – no to nuclear testing and no to atomic weapons!

It is important to understand the atmosphere of those days. The many bureaucratic and power structures of the U.S.S.R. were still in place, and the military-industrial complex was still in power. All the force of their pressure was concentrated, naturally, on the president of Kazakhstan. I remember weekly trips to Moscow, to see Oleg Baklanov, the secretary of the Central Committee of the Communist Party in charge of the military-industrial complex, and Nikolai Ryzhkov, chairman of the government, and finally Mikhail Gorbachev. They all had the same demand: "Calm the people down, they'll listen to you. And the country needs three to five years to get things in place. And then we'll shut down the test site". They promised to send aid to the region and so on. Some of the hotter heads made threatening hints. But thanks to Gorbachev, many things had already changed and there was space for freedom of action.

On the other hand, all actions of the public, especially the activists, had my support. Naturally, without such support from the republic leadership, the activists could have easily been spotted by two or three simple actions of the KGB. The technology was very well polished in that regard.

I made a trip to the test site and stood in the middle of the place where the last underground nuclear explosion had taken place – the earth was black and cracked rocks, seemingly still warm, lay on top of it – before announcing a special session of the parliament to discuss shutting down the nuclear test site without the permission of the U.S.S.R. leadership.

A large group from the army and nuclear scientists persistently asked for permission to come to the session. It was obvious that they would try to persuade the deputies not to shut down the test site. They would promise benefits and talk about the safety of nuclear explosions and so on. I could not deny them access to the session. The issue had to be decided by the people of Kazakhstan themselves.

The discussion began in the morning and continued into the night. Everyone was heard. It became clear that the nuclear lobby had had its effect on part of the deputies. In the concluding part, not only some deputies but even some leaders of Semipalatinsk Oblast – fierce opponents of testing – began asking me to permit a few more explosions, with the aim of getting serious material compensation for the region. But there had been many such promises made before. Empty promises.

In my concluding remarks I said that I took the responsibility on myself and using my powers declared the test site shut down by decree. A page in nuclear history, and not the simplest page at that, was turned.

With the support of the nation we proclaimed a unilateral ban on the inhuman testing of nuclear weapons, announced the closing of the Semipalatinsk test site, which had become a literal headache for all people in Kazakhstan, and declared that our country would always be a territory free of nuclear arms and their testing.

How can those historic days be forgotten? How can we forget that sense of relief and freedom from the psychological discomfort felt by the long-suffering residents of Semipalatinsk and other oblasts near the epicenter of nuclear explosions? How can we forget the sense of pride for the people of Kazakhstan, who said "No" to the nuclear monster?

One must suffer from historical amnesia and shamelessness to go against the will of the people and, foaming at the mouth, insist on the need and good prospects of a nuclear Kazakhstan.

The people of Kazakhstan would have never forgiven our weakness in the face of the nuclear temptation.

We executed the will of the people and in those days we learned democracy. It was one of the first independent steps of an independent Kazakhstan. We recognized and began correcting the mistakes of the totalitarian Soviet past. We set forth on a new democratic path. And the foundation of that path was laid in that historic decision for a non-nuclear Kazakhstan.

THE GEOPOLITICAL IMPLICATIONS OF HISTORIC DECISION

Without a doubt one cannot build a peaceful future without stringent analysis of and accounting for the complex of external and internal factors, which, one way or another, can negatively affect the national security and territorial integrity of our young state. The paradox of the decision is that decisions very often seem wrong only because one has taken into account many important but contradictory factors in making it. The final decision would seem counterintuitive given the geopolitical neighborhood in which Kazakhstan lives combined with many other factors of its political, economic and military stature in the world. However, the more factors one analyzes the more likely the decision will reflect and resolve the problem accurately. In Kazakhstan's case, the right decision is based on one premise, and this premise goes against the majority of reasons that we Kazakhstanis could have considered in the decision-making process to close the door on our nuclear history rather than to perpetuate it at a such a high cost to our people.

But healthy pragmatism has limitations as the premise for arguing against nuclear armament and, specifically, against Kazakhstan's continued role in Eurasia's nuclear military-industrial complex. Dealing with weapons of mass destruction has no logi-

cal or rational basis. Here the basis can be historical responsibility and the presence of universal and far-reaching vision.

There can be no alternative in the issue of "mutually assured destruction", the pragmatic arms control doctrine appropriately named "MAD", or in looking for reasonable compromises based on trust and confidence building measures and efforts to reduce the potential for conflict. The thesis that a state's security boils down to being able to avenge its total destruction with a second total destruction is nothing but political idiocy. The true security of a state must be guaranteed only by constructive relations, not destructive ones. It must be based not on the principle of annihilation but on mutually peaceful and diplomatic victories and defeats.

Now it is hard to imagine the destructive role Kazakhstan's nuclear arms would have played in the system of regional and global security if we had decided to preserve our nuclear status. In those days, when the historic decision on a non-nuclear Kazakhstan was being taken, we examined and analyzed a variety of destabilizing factors in Kazakhstan's nuclear potential. First of all, possession of nuclear weapons would have inevitably provoked us to deal with regulation negotiations only from a position of strength, especially in negotiations with the states sharing our borders. In that way the very existence of atomic weapons and corresponding means of delivery would have heightened any question and any issue that Kazakhstan would encounter in the process of international politics and relations. The status of Central Asia as a region filled with nuclear arms would have inevitably heightened the political situation in the region, creating an environment of constant explosive tension and not helping in the processes of peaceful regulation of any potential conflicts.

Second, possession of nuclear weapons cannot be a stimulus for the development of external integration. In conditions where we could potentially flex our nuclear muscle from time

to time; there could be no thought of civilized integration into the world community. Our nuclear ambitions would have been in direct contradiction with the bylaws of the United Nations Organization and with the Treaty on Nonproliferation of Nuclear Weapons, which were signed by almost all the countries in the world. It would have meant unequal partnership with our nearest neighbors and other states and an armed opposition and a wary relationship between the Republic of Kazakhstan and the world community.

Third, possession inevitably leads to a new quality of relationship with the world community. It goes without saying that our country would have been a player and a target in all the strategic plans of nuclear and non-nuclear countries as a probable enemy and source of constant military threat. It is not hard to imagine that probable enemies would aim their nuclear missiles at our territory and our cities.

These factors inevitably lead to the conclusion that possession of nuclear weapons does not mitigate the risk of total and irreversible use of weapons of mass destruction against a country with a nuclear arsenal but actually increases that risk many times over. The nuclear threat is the most global and dangerous threat not to the independence and sovereignty of a state, but to its very existence. In possessing nuclear weapons, we automatically would represent a potential military threat for practically every country in the world, at least to those within the range of our delivery systems – the missile and aviation complex. We cannot allow others to regard our country as a conditional enemy, just as we cannot allow third countries to be seen as possible strategic targets.

It is impossible to live normally in a community of states, especially while conducting an active policy of external integration, and continually threaten with or be threatened by nuclear attack. Today we are free of the sword of Damocles that had

hung above us – not a single nuclear warhead of another state in the world is aimed at us! And knowing and feeling that, believe me, can outweigh all other considerations and intentions.

Finally, nuclear status would have inevitably led to a negative attitude from the world community and to international isolation for a demonstration of blatant disregard for the principles of non-possession, nonproliferation, and non-deployment declared in the Treaty on Nonproliferation of Nuclear Weapons. The Nonproliferation Treaty is the norm for international law and it stipulated a range of consequences and responsibilities. Anyone who violates it risks becoming a pariah of the civilized international community. The right of the majority is not always absolute and true, but international law is something that it would be highly unreasonable and short-sighted to disdain.

It is hard to imagine the destructive wave of political, economic, ecological, and civil disasters that would have befallen Kazakhstan had it chosen to act contrary to common sense and the logic of events and to leave on the long-suffering land of Kazakhstan the deadly weapons that bear only the destruction of all human hopes.

It is said, "He who wants to rise up will be humiliated". Kazakhstani don't want to rise up; we simply want to live in peace. After all, to want Kazakhstan to be a regional nuclear power and, incidentally, a radioactive one, you must have no sensibility as a statesman and no sense of historical responsibility. Still, it was necessary sometimes to explain to some our of Kazakhstani hawks how pernicious the nuclear path would be for the future of Kazakhstan and its people. Could you, knowing all this, endanger the future of your young country for the sake of the ephemeral benefits of possessing nuclear weapons? I don't think that anyone could ever doubt that there was only one answer.

A NEW UNDERSTANDING OF SECURITY: THE DOCTRINE OF TRUST

With the collapse of the U.S.S.R., the long-standing economic ties between Kazakhstan and other former Soviet republics were torn. We were facing systemic market reforms, which could not be easy by definition. We knew that the country's economy was on the verge of a serious crisis. It was unlikely that anyone could predict with confidence what political overreactions might ensue. Many political experts warned us of possible serious sociopolitical and ethnic conflicts. And I must admit that these predictions were not without basis. A bloody wave of meaningless inter-ethnic clashes had rolled across many regions of the former Soviet Union.

We could not guarantee the security of nuclear arms in that situation.

Today we are proud that we people of Kazakhstan had the wisdom and mutual respect in those difficult conditions to preserve stability and ethnic peace in our country. That is the common achievement of all our people.

But I am just as proud that in the early 1990s, when the decision about rejecting nuclear weapons was taken, we thought not only about ourselves and our own interests. We thought – however pompous it may sound – about the common good for humanity.

I believe it was a nuclear physicist who noted with black humor to the question of what would come after nuclear weapons: "If there is a World War III and it is nuclear, then any survivors will be back to using rocks and clubs". To me this illustrates perfectly the idea that continuing the arms race will lead humanity into an evolutionary dead end from which there will be no exit.

The laws of international politics are similar in some ways to the laws of drama: If there is a rifle hanging on the wall in

the first act, it is bound to go off in the third. In accordance with that logic, the divisive arms race and endless increase in military potential does not promote stability and safety in international relations, but on the contrary, creates the preconditions for future destabilization. In that regard it is hard to imagine how the situation would have developed in our region if Kazakhstan had decided to keep nuclear weapons.

On the whole, the problem of assuring security in Asia, where close to 3.5 billion people live, or more than half the world's population, has always been present. To the present day, Asia has been burdened by numerous conflicts, mutual distrust, and suspicion. The populace is extremely heterogeneous; there are many nations, many political, religious, and cultural traditions. Under these conditions, sometimes the slightest spark is enough to set off a major conflict.

That slightest spark for many countries in the region is the unsettled situation with territorial disputes with neighboring states, which naturally does not promote an atmosphere of trust and cooperation. The Asian subcontinent is pulsing with such hot spots.

The arms race pushes its participants into armed conflicts – creating a vicious circle that is destructive for the countries involved in the conflict and for the entire Asian region because of the unpredictability of military actions in the presence of nuclear arms. We understood that security in the region can be guaranteed only by intense joint efforts – no longer the prerogative of a few anchor power brokers, as it had been in the period of the Cold War. What is called for now is joint efforts from all the states in the region, no matter their size, population, or economic potential.

The multipolar world defines the new world order. This is determined, first of all, by the process of globalization, in which the world becomes ever more interdependent and the course of

solving issues of development and security only through one's own resources is no longer viable. The only guarantors of security in our times are joint efforts in multilateral cooperation based on mutual trust.

I first proposed the creation of a new model for security in Asia in 1992 in New York at the 47th Session of the General Assembly of the United Nations. I called it the Council on Cooperation and Trust in Asia (CCTA). This initiative was dictated by the need for an effective and universal structure for security on the Asian continent, which, unlike other regions of the world, did not yet have such a mechanism.

Speaking from the podium of the United Nations then, I had no idea what serious security problems Central Asia would be facing in a decade's time. However, the cardinal changes in the geopolitical situation that followed the collapse of the U.S.S.R. demanded new approaches to security issues. We saw the CCTA in that context, as a process of strengthening relations and cooperation among Asian states in order to assure stability and security in the region. From the start, the initiative to create CCTA found support in practically every Asian state and many international forums, first and foremost the United Nations.

What is the substance of the security model proposed by Kazakhstan?

First, we propose that the priority in building international relations must be regional aspects of security. Bringing in third countries or international organizations for solving regional problems can be done only with the agreement of and in the interests of the states in the region. Only through strengthening regional cooperation can we solve our own national goals. Regionalism is the obverse face of globalism – if there is an interdependence of states, it is made manifest first of all on the regional level.

Second, the inviolable principle and mandatory condition of security is the true legal equality of all states that are subjects

of international relations, regardless of their economic, military or political potential. Atavistic remnants of colonial psychology, which often appear in international relations in the form of discussions about "elder and younger 'brothers", "superpowers", "geopolitical poles", and so on, are some of the most dangerously destabilizing factors in international relations and must be overcome. History and common sense suggest that the cultivation of the idea of one's exceptionality or superiority, in whatever form, open or covert, is the shortest path to self-destruction.

Third, one of the main principles of obtaining international security is mutual respect of sovereignty, rights to maintain territorial integrity, and noninterference in the internal affairs of states. Obviously it is time to accept this as a valuable opportunity for mutual enrichment and development of the differences in national traditions, cultures, mores, and values, which at the present are often perceived as a divisive factor.

Fourth, the resolution of all disagreements between states must be accomplished exclusively by peaceful measures. Armed forces may not be used for anything but defense. The mechanism for realizing this norm must be joint control over weapons.

Fifth and last, a most important aspect in guaranteeing international security is the principle of expanding trust between states. This principle of trust must replace the principle of military containment currently prevalent in conflict regions. It is trust that allows constructive solutions of any contradictions that might arise in relations among states.

The proposed model for security presumes a limited combination of military-political and socioeconomic aspects. Security and stability are the preconditions of economic development, and mutually beneficial economic development, in its turn, is the collateral for long-term regional security. These principles were the basis of CCTA and are reflected in the found-

ing document of this international organization and the declaration that regulates the relations among the member states of the CCTA. The Declaration was signed in September 1999 in Almaty at a meeting of ministers of foreign affairs of the participant states. It sets out a doctrine of trust in Asia: respect for the sovereignty and rights of the member states; preservation of territorial integrity; noninterference in one another's internal affairs; peaceful regulation of disputes; refusal to use force, disarmament, and control over weapons; cooperation in social, trade, economic, cultural and humanitarian spheres; and respect for human rights in accordance with the principles of the United Nations and international law.

That meeting had historic import, not only because it was the first meeting of the ministers of foreign affairs of the member states of CCTA, but also because the declaration laid the legal foundations for a new system of Asian security. The representatives of Asian countries did not reach decisions very quickly; there were long and occasional sharp discussions, especially relating to problems such as disarmament and weapons control, noninterference in internal affairs, and the humanitarian dimension. But it would be naive to imagine that a quick solution could be found for such complex problems.

Preliminary discussions involved representatives of more than 20 Asian states, many of which subsequently became members or observers of CCTA. At present the member states of CCTA are Afghanistan, Azerbaijan, China, Egypt, India, Iran, Israel, Kazakhstan, Kyrgyzstan, Pakistan, Palestine, Russia, Tajikistan, Turkey, and Uzbekistan. The observer states include Australia, Indonesia, Japan, Korea, Mongolia, Ukraine, the United States, Libya, Vietnam, Thailand, and Malaysia. We are united by a firm desire to create a dependable security and cooperation system in Asia by our own efforts and our common opinion that a safe world can be built only together.

Besides CCTA, the new concept of security, based on the principles of mutual trust, is also embodied within the framework of the Shanghai Five, whose members are China, Russia, Kazakhstan, Kyrgyzstan, and Tajikistan. In April 1996 in Shanghai, the heads of our five countries signed an agreement to strengthen trust in the military around state borders. It was probably the first example of a practical application of the Policy of Trust proclaimed by Kazakhstan in the military sphere. And in 1997 our countries signed the next significant agreement on mutual reduction of armed forces around borders.

Within the framework of the Shanghai Five, we managed to achieve agreements on transparent military behavior; the reduction of activity around borders; the regulation of border and territorial issues; regular exchange of information on military activity; cooperation in the fight against international terrorism, drug and arms smuggling; and illegal migration. This had never existed in Asia before. The agreements made within the framework of the Shanghai Five were a powerful step toward assuring security not only on our continent but in the whole world.

A clear sign of the prospects of developing the forum and an important step toward security in the region appeared when Uzbekistan joined the work of the Shanghai Five. It is possible that the present format of the Shanghai Five will be expanded, not only with Uzbekistan but with other countries as well. Mongolia, Iran, India, and Pakistan have all shown great interest, and there is hope that this forum could turn into a supraregional organization.

The concept of building international security on the principles of mutual trust has shown its effectiveness in Asia. Agreements reached within the Shanghai Five and CCTA have created a new reality on the continent, characterized by a greater level of security and mutually beneficial cooperation both in military and political areas. It is symbolic that within CCTA Egyptian leader

Hosni Mubarak has proposed an initiative for creating a non-nuclear zone in the Near East. A real expression of the Policy of Trust and a symbol of the new model for security were Kazakhstan's rejection of nuclear weapons and the process of creating a non-nuclear zone in Central Asia.

Kazakhstan suggests building a new model of global security on the base of interlocking regional subsystems like the Organization for Security and Cooperation in Europe (OSCE) and CCTA. This mechanism would not in any way replace the existing system, based on the United Nations Charter, but only add to it. Current practice in international relations shows a certain reduction in the role of the United Nations. If this process continues, the entire system of security could be torpedoed, which naturally is unacceptable. Obviously, the role of the United Nations in global security must be modified. Only the creation of such a system can assure the necessary, peaceful, and stable dialogue among civilizations that humanity has been trying to achieve in the post-Cold War era.

TOWARD A NUCLEAR-FREE FUTURE

The naive anticipation of total peace, security, and comfort that would follow the collapse of the U.S.S.R. and the Communist bloc turned out to be a bitter disappointment.

The world does not stay in place: Equilibrium is replaced by disequilibrium, integration by differentiation, convergence by divergence – and this changeable evolution suggests that the relative power parity developed in the 1970s and 1980s would be followed by a phase of disparity. The premature departure from power by the president of the U.S.S.R., Mikhail Gorbachev, predetermined the fatal unpredictability of the political fates of those who followed – first of all in Russia as the main inheritor of the U.S.S.R., but also in the other post-Soviet republics.

The world could not calculate all the possible variants of developments in the post-Soviet space. And in this uncertainty there arose a wave of the most varied suppositions about the future of the new states.

The world community could only hope for a relative period of stability until all the necessary institutions of state were formed in the Commonwealth of Independent States. Kazakhstan, more than the others, justified the hopes of the world community.

Future historians of our period will be struck by the first express cry of the people of the new nation: "Shut down the test site!" The entire biography of the renewed Kazakhstan is an unprecedented transformation of nuclear materials and technologies from weapons of mutual threat, terror, instability, blackmail, and violence into tools of peace, security, cooperation, good neighborliness, and dialogue.

The Test Site Is Sentenced...

In accordance with the will of the people of Kazakhstan and feeling my responsibility before the nation's future and responding to the interests of statehood and independence, on August 29, 1991, I signed Decree No. 409, "On Closing the Semipalatinsk Nuclear Test Site". Never again will atom and hydrogen bombs explode on our territory. This was a first and unique precedent in atomic history: a state voluntarily and unilaterally closed down an entire complex that had worked with experimental detonations of nuclear and thermonuclear devices.

Some countries could have halted testing temporarily. These precedents exist and are known. But the inadequacy of such steps is that the test sites themselves were still maintained. Whenever they wished the leaders of a nuclear country could easily restore the process of testing and go on with plans for single or serial tests. In our case, we did not simply stop every kind

of testing of nuclear arms, we eradicated the root of evil – *even the potential possibility of any nuclear explosions.* It doesn't matter if they're nuclear or thermonuclear. It doesn't matter if they're above ground, in the atmosphere, or underground. It doesn't matter if it's a single explosion or a series of explosions. What does matter is that shutting down the Semipalatinsk test site meant *no atomic explosions of any kind will occur, at any time, in any place on Kazakhstan's territory.*

But that was only half the battle. It was clear that we needed not only to repeal future explosions, but also to correct the after-effects of the previous ones. So after that historic decision came the action of passing a series of measures to liquidate or at least ameliorate the negative consequences of atomic testing on the ecology of the land and the health of people living in the zone of ecological disaster. We were the only ones who had to put up with the results of the tests. There were many arguments about who would be the new owner of the nuclear arms, but not a single one as far as I know over who would own the completed nuclear explosions and their numerous consequences. Who would take or accept the suffering and sorrow of our radiated people and our radiated land?

Our first priority was to define formally the territories that had been subjected to the most destructive influence of nuclear testing and fell under the definition of "zone of ecological disaster" in many categories. Calculating the degree of contamination of a locality is labor intensive, and much more time is needed for final clarity in this difficult issue. Decree No. 708 of the Government of the Republic of Kazakhstan formulated a list of regions of ecological disaster bordering the Semipalatinsk Nuclear Test Site.

Unfortunately, mistakes were made, as the inhabitants of some regions overlooked in this list justly pointed out. This occurred because it was almost impossible to avoid making mis-

takes in this narrow area, since the destructive effects of the tests are not selective or focused. A radioactive cloud does not know geography and cannot remain within the borders of just one region without crossing over into others.

Here is a typical appeal sent to the deputies of the Supreme Council by the residents of the village of Karagaily, which began:

We, the voters of the village of Karagaily, Karkaralinsk Region, learned with profound indignation that the Resolution of the Cabinet of Ministers No 708, dated November 15, 1991, does not include the Karkaralinsk Region, including the village of Karagaily, in the list of regions of ecological disaster bordering the Semipalatinsk Nuclear Test Site.

In their letter the residents of Karagaily presented many facts in evidence of the negative aftereffects of nuclear testing, including this one: "In the village of Karagaily 88 children out of 1,000 are born with defects. They are born with swollen, water-filled heads, many with harelips, without defined sex organs, or with none at all".

Naturally, such letters and petitions from residents of regions near the atomic test site were brought to my attention. And after corresponding evaluations and commissions to establish the ecological, medical, and radiation situation, we always undertook appropriate measures to compensate the population for the damage from the explosions.

There followed government resolutions redefining the map of ecological disaster areas. In this specific case, the Karkaralinsk Region of Karaganda Oblast was included in the list of disaster areas.

Shutting down the test site is not simply destroying its deadly infrastructure and banning more testing. It means long years of rehabilitating contaminated lands, recultivating the soil and environment, restoring the biopotential, and helping the sick and mentally affected people who had lived for half a century

next door to atomic death. That is a long and difficult process. But I think we will eventually be able to put a period at the end of the hardest page in the history of our state.

A Collective Security Button...

In December 1991, two treaties were signed: in Almaty on December 21, the Treaty on Joint Measures on Nuclear Arms, and on December 30 in Minsk, the Treaty Among Member States of the Commonwealth of Independent States on Strategic Forces. The Almaty treaty presupposes the impossibility of employing nuclear arms in a unilateral way without approval of the heads of the member states of the treaty. The Minsk treaty also presupposes the impossibility of collectively using nuclear arms without approval and consultation with all the states in the C.I.S.

I had every reason to suppose that the double agreement achieved in Almaty and Minsk would in principle guarantee a reliable defense of territorial sovereignty for us all and guarantee our nuclear inviolability. In accordance with the treaties, we, the heads of state of the C.I.S., recognized Russia as the inheritor state of the U.S.S.R – including the nuclear arms. This allowed the Russian Federation to join the permanent Security Council of the United Nations as a state that had retained the nuclear inheritance of the Soviet Union. In its turn, Russia promised to recognize the sovereignty and territorial integrity of the new sovereign republics. For the nuclear arms, the plan was to hand over the nuclear button to the president of Russia with guarantees that the red button could be used only with the collective agreement and in consultation with all the states of the C.I.S. who then had nuclear arms – Kazakhstan, Ukraine, and Belarus.

Against our will and despite mutual assurances, the treaties were put to their first test early on. By December 25, 1991, the President of the Russian Federation promulgated a decree, "On

Improving the Reliability of Military Management of Strategic Nuclear Forces of the United Armed Forces of the C.I.S. in Extraordinary Situations". The decree provided for use of atomic arms without the agreement of the countries where the weapons were located and without consultation with other states of the C.I.S. It seriously and cardinally contradicted the Almaty and Minsk treaties. The reason for Boris Yeltsin's decree was clear: Situations were possible in which time limitations would not permit assured mutual destruction in case of a sudden nuclear attack. But the developments in foreign politics clearly were not in accord with that unilateral decision. Medium- and short-range rockets were being liquidated. The flight time for such missiles is around six to seven minutes.

Without the Strategic Arms Limitation Treaty (SALT) agreement, the Russian Federation's argument would have been acceptable and legally ratified. However, without the threat of an attack using small- and medium-range missiles, I felt that there was enough time to react to a threat, including time to observe the procedures of agreement and consultation with the C.I.S. countries. After all, the main strike force in that case would consist of strategic bombers and intercontinental ballistic missiles, whose flight time is around 30 to 40 minutes. The argument of "not enough time" does not stand up to scrutiny. Moreover, the heads of all the states would be armed with a system of instant conferencing that would allow them to coordinate a decision among all of them simultaneously. That is, not to consult consecutively one after another for permission to strike a "revenge blow", but literally in the course of one or two minutes to discuss the question with everyone at once. Nevertheless, we continued a joint search for a collective security system within the framework of the C.I.S.

On May 15, 1992, Kazakhstan signed a treaty among the C.I.S. countries, "On Shared Defense", and a resolution, "On

Nuclear Security". At the same time we solved Kazakhstan's domestic nuclear issues by creating the National Nuclear Center and the Atomic Energy Agency of Kazakhstan.

Exorcising "Satan"...

On May 22, 1992, Kazakhstan, as an equal party in START, signed the Lisbon protocol on nonproliferation and gradual dismantling and removal of nuclear missile weapons, taking on the obligation of freeing itself of nuclear arms and declaring its territory a non-nuclear zone. On November 20, 1992, in Almaty I received an American delegation, which included U.S. senators and specialists in political and military issues. The delegation was headed by Sam Nunn, the chairman of the Senate Armed Forces Committee, and Richard Lugar, a member of the Senate Foreign Relations Committee. They told me the plans of the U.S. administration towards Kazakhstan, which were built on the basis of my trip to Washington. In particular, there was a profound understanding of Kazakhstan's position and a general approval of our position on the Treaty on Limiting Strategic Arms, which we had recently signed.

Touching on the practical problems of disarmament, they revealed the Senate decision to allocate around $800 million to pay for the transfer, dismantling, and liquidation of nuclear arms located on the territory of the C.I.S.

A framework agreement between the United States and the Republic of Kazakhstan was ratified on September 24,1993. In accordance with it, the United States agreed to supply technical and financial aid to solve current and urgent tasks in nuclear disarmament: limiting strategic nuclear warheads and delivery methods; control over nuclear materials and shielding their radioactivity; equipment for use in accidents in extreme situations; the organization of a special channel for intergovernmental

communications; and a system of control over exports in Kazakhstan. A year after Lisbon, we had taken concrete steps on the path to total liquidation of strategic nuclear weapons.

In that same memorable year, by decision of our Supreme Council, we were the first C.I.S. country to ratify the Treaty on the Nonproliferation of Nuclear Weapons (NPT), signed a year earlier on December 30, 1991. Membership in the Nonproliferation Treaty is probably one of the most important steps we took on the way to a non-nuclear future. NPT has been the norm of international law and the most authoritative form of collective efforts toward universal disarmament and nonproliferation for a quarter of a century. Joining the treaty as a non-nuclear state became a juridical confirmation of our non-nuclear status.

On March 28, 1994, I met with Boris Yeltsin to sign an agreement to bring out all nuclear warheads from Kazakhstan to Russia within 14 months and to dismantle all silos with launch pads for SS-18 missiles in the next three years. The agreement stipulated that Kazakhstan would be reimbursed the value of the nuclear materials contained in the nuclear warheads. All the important issues related to the text of the agreement and the conditions of evacuating the atomic weapons had been discussed earlier, so we completed the protocol part and the diplomatic exchange of pleasantries rather quickly. We had a very good idea of all the underwater rocks that could snag proceedings and knew that the main work was still to be done.

As it turned out, there were no special problems with the removal and transportation of nuclear warheads. In strict compliance with the deadlines, on April 25 of 1995 the army engineers successfully removed all the strategic and tactical nuclear weapons to Russian territory. As Kazakhstani officers who took part in the removal later told me, the nuclear warheads were loaded late at night. Special railroad cars were brought in and the atomic monsters were stacked cautiously and neatly, observing all

measures of precaution. In 1996 the 57th and 38th Rocket Divisions of the Strategic Rocket Forces were disbanded. Between May 1995 and September 1996 the Russian army destroyed the launch pads and the control centers for the intercontinental ballistic missiles. At present, the sites of the former ICBM bases are subject to inspections controlled by a joint commission. In the period between 1996 and 1999, all the launch pads and universal command points that had been part of the Strategic Rocket Forces were liquidated within the Kazakhstan-U.S. program for Joint Reduction of Threat. Seven heavy bombers that had not been removed at the time from the Shagan air base for technical reasons were destroyed in 1998 in accordance with START-1.

Beginning in 1994, within the framework of the treaty between Kazakhstan and the United States, work was done in record time in the areas with launch pads, including chemical and analytical evaluation of the types and levels of contamination, liquidation of the infrastructures, and recultivation of soil conditions to meet international and national standards for agricultural use. The project was successfully completed in 1998.

Within the framework of a very important and constructive joint Kazakhstan-American program, Joint Reduction of Threat, work began in 1998 on liquidating unified loading complexes in warehouses for nuclear arms, after preliminary examination in 1997. It was important not only to destroy the nuclear arms but also to make sure that our country, even hypothetically, could not become a source of constant threat and tension.

The Forgotten Stepchild of the Test Site...

Despite excellent progress, the process of total denuclearization of the republic threatened to drag on. As we knew, there was still an undetonated test plutonium 0.4 kiloton charge in shaft 108-K, 594 meters long, at a depth of 130 meters, at the

Semipalatinsk test site. It had been laid there under great secrecy back in May 1991 and figured in a project called Physics Experiment FO-100-SZhR. The main goal of the planned test, as far as I know, was to research the effect of extreme x-ray radiation on the parameters of military technology and electronic apparatus. The charge had not been detonated, and after my decree of August 29, 1991 that shut down the test site there was no legal way it could have been detonated.

After the directive of the Ministry of Defense of the Russian Federation, evacuation to the north of military units located on the Semipalatinsk test site to guard nuclear objects began. The problem of the undetonated nuclear device became our problem by inheritance. I admit, the problem truly was a complicated one, and the solution did not appear readily. Dismantling and removing an atomic charge almost a kilometer underground was an expensive and extremely dangerous proposition. My first concern, of course, was whether a spontaneous explosion was possible, especially after the bomb had outlived its shelf life. As it turned out, all the experts agreed on one thing: there would be no spontaneous explosion. The authoritative chief constructor of nuclear charges, B. Litvinov, also stated categorically: "There is no danger". However, he did warn that there was a potential of such danger, in case there was a detonation of the charge – for instance, if a bypass shaft was being built or a local earthquake happened. Then, the strong, purely mechanical effects could move the uranium mass close enough to form critical mass. In other words, don't touch the nuclear device, and it won't blow up.

But the device had been there almost four years, and you can't just forget about it. It wasn't a shovel left in a sandbox. The expert opinion that there was absolutely no danger of a spontaneous uncontrolled reaction was authoritative, of course, but not absolute. Moreover, my experience dealing with experts in the most varied fields has taught me that the more categori-

cal and authoritative an expert's definitive "no" or "impossible" sounds, the quicker you should start planning alternatives.

In the final analysis, after going through the most varied scenarios for neutralizing potential danger, the military experts from Arzamas-16 suggested that we do not remove and transport it to the Federal Nuclear Center of Thermophysics Institute at Chelyabinsk-70, as planned, but simply destroy it in situ. Not detonate the nuclear charge, but destroy it. And it could be done with ordinary explosives.

The Russian side offered a working draft called, "Opening and Destroying Object 108-K", which examined the possibility of blowing up the charge in the shaft. In the first place, it was absolutely necessary to check the ecological effect of the project, and I had a joint committee created that included representatives of the Ministry of Ecology and Bioresources, the Atomic Energy Agency, and non-governmental experts.

After the commission and many other experts and consultants did their work, the consensus was that the lesser evil, for all its minuses and inadequacies, would be exploding the nuclear charge in the shaft with explosives. The final document stated: "To exclude any dehermetization of the nuclear device, to destroy it in the end of shaft 108-K using a superimposed charge of chemical explosives, which fully excludes nuclear energy creation". That's what was decided.

It would have been very symbolic that the final nuclear device on Kazakhstan soil was deported, so to speak, rather than blown up. On May 31, 1995, at 13:16 local time, 400 kilograms of chemical explosives destroyed one kilogram of radioactive plutonium. Lovers of symbolism could note that the last atomic charge at the Semipalatinsk test site was not exploded but destroyed. That non-nuclear explosion symbolized Kazakhstan and Central Asia becoming a non-nuclear territory.

"No" to Nuclear Testing!

On September 30, 1996, we joined the Comprehensive Test Ban Treaty. Of course, the first issues to handle were atomic monitoring and observation systems for nuclear testing, which were formulated in an agreement between Kazakhstan and the Preparatory Commission of the Test Ban Treaty. Certain physical characteristics made Kazakhstan ideally suited for building seismological stations to register earth tremors caused by nuclear explosions. It was planned to add new sites into the International Monitoring System that oversaw the observance of the Test Ban Treaty.

By that time our National Nuclear Center and the U.S. Ministry of Defense had signed an agreement stipulating the liquidation of the shafts created to hold charges and their subsequent detonation. At that time there were 186 shafts of all sizes and lengths. We regarded the liquidation of the nuclear holds as a necessary condition for joining the Test Ban Treaty and for our firm intention of never holding nuclear detonations on Kazakhstan soil.

The process of destroying the tunnels lasted almost four years. The amount of work it required was enormous. But on July 29, 2000, the last shaft in the Degelen Mountains for nuclear testing of the former Semipalatinsk Nuclear Test Site was destroyed by a 100 kilogram charge of granulated TNT.

From Guaranteed Danger to Guaranteed Security

I always have felt that whoever has a weapon and tries to keep others from having it automatically acquires natural and necessary responsibilities before the more disarmed. If the more armed does not accept these responsibilities, he is taking ac-

tion against the disarmed that could be qualified as "factual or preventive enforced disarmament from a position of strength without a subsequent safeguard of security". But if it does happen and the stronger one promises to safeguard the security of the unarmed party with a mutual agreement, then you cannot get by without mutual agreements and mutual obligations. Having rejected a nuclear approach, we thereby gave guarantees to other states that our country does not represent a threat of nuclear aggression to them. We made the first step, if I can put it that way, to a progressive and peace-loving world community.

In connection with that, I must recall that at one time Kazakhstani and foreign political and public figures voiced certain concerns about the prolonged process of denuclearization of our republic. The issue was sometimes so acute that it appeared as a stumbling block in domestic and foreign policy and echoed in many processes that required collective participation.

Some directly accused us of having ulterior motives and secret plans to review our non-nuclear decision and actually use the nuclear potential as a long-term means of blackmail to solve other problems. Others sincerely feared the possibility that Kazakhstan would become an Islamic nuclear state. Still others had the impression that our slowness was actually a way of gradually turning our country into a source of constant nuclear terrorism.

In other words, everyone had a theory, depending on one's political and geostrategic expertise. There isn't much room here for irony, but I used to be surprised and confused by the open lack of understanding of very obvious things. I'll tell you what I mean.

If you agree that nuclear weapons play the role of a means of deterrence, then you must agree that this is its functional freight, analogous in principle with the scarecrow in a garden. Exactly that. A scarecrow is a deterrent to a much greater degree than is a nuclear weapon, first of all, because a scarecrow by

definition cannot cause any physical harm, even potentially, to the destroyers of gardens. Except for moral and psychological pain in the feathered aggressor. At the same time, thanks to its function as threatening deterrent, the scarecrow does not allow the uninvited guests to make themselves at home in the garden. In the heat of passions over the declaration of the speed toward a non-nuclear Kazakhstan, somehow no one remembered the main purpose of atomic weapons – to coerce the probable enemy into enforced pacifism. All anyone remembered were the destructive qualities and the dangers stemming from that.

For the first time in recent history, our country had state independence. That step brought corresponding obligations to us, the country's leadership – first of all, to make every effort and take further steps toward strengthening the statehood and sovereignty of the Republic of Kazakhstan – similarly, to make the necessary and mandatory efforts to safeguard our territorial integrity and security.

We had no doubts that a nuclear Kazakhstan was not to be. Unlike many other countries, we no longer had the protection of someone else's nuclear umbrella. In the end we received safeguards from the nuclear powers that were in fact guaranteeing the security of our republic from external nuclear threat and threat of a military character from states with atomic potential. The temporary pause in the process of denuclearization of Kazakhstan was determined by diplomatic and legal problems getting those nuclear safeguards.

A lot of time was spent specifying certain points dealing with the safeguards and their acceptance and ratification by all sides. After long personal consultations and negotiations with the heads of the nuclear states, we signed a collective memorandum safeguarding the nuclear security of the Republic of Kazakhstan. It was signed by the largest nuclear powers – Russia, the United States, and Great Britain. This extremely impor-

tant memorandum on security safeguards was signed by U.S. president Bill Clinton, Russian president Boris Yeltsin, and British prime minister John Major on December 5,1994, during the OSCE summit in Budapest. The parties first reaffirmed their obligation to respect the independence and sovereignty of our republic, and then rejected the use of power politics against Kazakhstan or economic sanctions if they do not correspond with the founding principles of OSCE, of which we are also members. The memorandum states that in the case that the Republic of Kazakhstan is subjected to aggression or becomes the object of the threat of aggression with the use of nuclear weapons, the great nuclear powers – the United States, the Russian Federation, and the United Kingdom – will take immediate action to give the appropriate help to Kazakhstan, a member state of the Nuclear Nonproliferation Treaty as a non-nuclear state.

Two months after that Memorandum on Safeguards of Nuclear Security of Kazakhstan was promulgated, on February 8, 1995, the Xinhua news agency carried the announcement of the Chinese government which gave Kazakhstan analogous security safeguards. In a rather transparent and at the same time categorical way, the guarantee states:

China has complete understanding for Kazakhstan's desire to obtain security safeguards. Unqualified restriction on using nuclear arms or threatening to use them against non-nuclear states and non-nuclear zones is the consistent position of the Chinese government. This fundamental position extends to Kazakhstan.

Earlier, during a visit to our country in September 1993, French president Francois Mitterand announced their safeguards of security for Kazakhstan. When in the course of our bilateral discussion I expressed my fundamental views on clear ties between nuclear disarmament and safeguards for Kazakhstan, he agreed with me and added that Kazakhstan must obtain

firm safeguards from France and other nuclear powers in case of external nuclear threat before starting the process of removing the atomic warheads.

That is the general outline of the epic tale of getting the documents so important for Kazakhstan's global and regional security and for further practical steps on the path toward a non-nuclear future. In my book *My Life, My Times, and The Future,* I go into greater detail about this lengthy procedure of negotiations that led to the antinuclear safeguards and signing of appropriate documents by the heads of states of the great nuclear powers of the planet.

From Non-possession to Control

The Nuclear Test Ban Treaty signed by the world community raised the issue of total rejection of all nuclear weapons, since no one can count on the reliability of such weapons without testing. Hence the interest of the world community focused on the development of a methodology of control and the need for global monitoring of all nuclear explosions. While our territory, naturally, must be free of nuclear weapons, it can be tied by the peaceful mechanisms of safeguarding global and regional security within the framework of the universal treaties on disarmament and nonproliferation.

Since 1993, the joint United States-Kazakhstan teams (IRIS and the National Nuclear Center) have been conducting seismological research in the steppes of Kazakhstan on the structure of the earth and monitoring underground testing of nuclear weapons. There are plans for the creation of a Center of Seismological Data.

Joint American-Soviet experiments on controlling testing showed that the territory of Kazakhstan can serve as an almost ideal platform for monitoring not only testing by those parties

but the nuclear testing of other countries. This is because: 1) seismic waves resulting from nuclear testing encounter minimal resistance from the geological structures of the northern and northeastern regions of Kazakhstan and amplitude characteristics of the waves do not weaken over long distances; and 2) territorially, Kazakhstan is situated in the very center of Eurasia, in a low part of the continent, which makes it easy to discover seismological calm points.

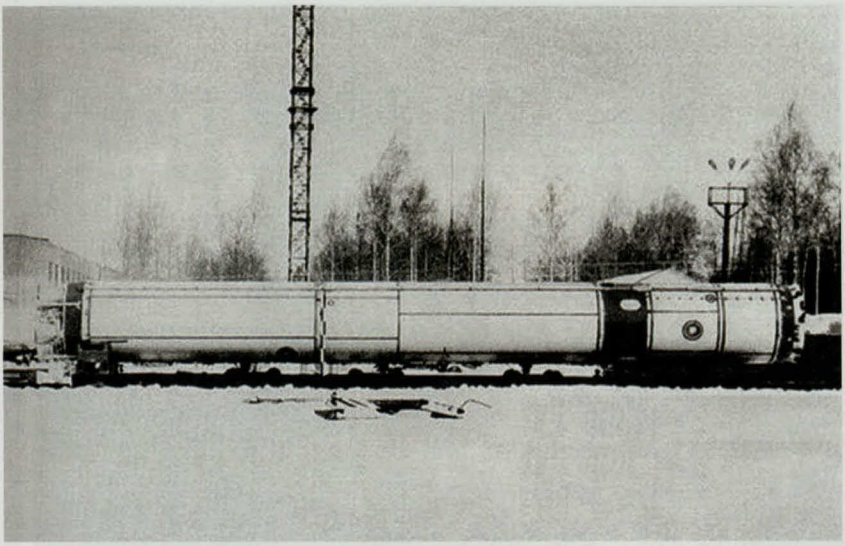
The joint project of the National Nuclear Center of the Republic of Kazakhstan, created on the base of the Semipalatinsk Nuclear Test Site, and the Lamont-Dougherty Atmospheric Observatory of Columbia University in New York, has developed eight wideband seismological stations, optimal for controlling both natural (earthquakes) and anthropogenic (nuclear explosions) sources. The stations are managed by the International System of Control within the framework of the Universal Test Ban Treaty.

Monitoring explosions with yields of over 10 kilotons is done by existing national seismic networks, which monitor the weaker events (up to 0.5 kilotons) in the form of earthquakes and weak explosions on regional distances of under 2,500 kilometers. In 1998, at the Balapan and Degelen launch pads of the former Semipalatinsk test site, experiments were begun on the development and demonstration of methodology of control over nuclear tests. This is executed with calibrated explosions of chemical explosives yielding from single digits to 100 tons in bore holes and shafts. The first such explosion, using five tons of explosives, took place on July 13, 1997. An analogous explosion as part of the Omega-1 experiment thundered on August 22, 1998, in shaft 214, located in Degelen. Subsequently, a whole series of calibrated explosions were made in various shafts as part of the Omega program.

At the time, several misunderstandings arose with those explosions. People said, "The test site was shut down long ago


Kazakhstan
International boundary
Oblys boundary
National capital
Oblys capital
Railroad
Road
RUSSIA
SOLTUSTIK QAZAQSTAN OBLYSY
SHYGHYS QAZAQSTAN OBLYSY
BATYS QAZAQSTAN OBLYSY
TORGHAY OBLYSY
MANGGHYSTAU OBLYSY
ONGTÜSTIK QAZAQSTAN OBLYSY
CHINA
MONG.
AZERBAIJAN
UZBEKISTAN
TURKMENISTAN
KYRGYZSTAN
TAJIKISTAN
Caspian Sea
Aral Sea
Lake Balkhash
Kazan'
Tyumen'
Kemerovo
Novosibirsk
Novokuznetsk
Ul'yanovsk
Ufa
Penza
Kurgan
Chelyabinsk
Omsk
Samara
Barnaul
Biysk
Petropavl
Saratov
Volga
Magnitogorsk
Qostanay
Kökshetaū
Ertis
Rūdnyy
Orenburg
Ural
Pavlodar
Oral
Aqsay
Atbasar
Aqmola
(Tselinograd)
Esil
Ekibastuz
Volgograd
Orsk
Semey
(Semipalatinsk)
Öskemen
(Ust'-Kamenogorsk)
Aqtöbe
(Aktyubinsk)
Arqalyq
Temirtaū
Qaraghandy
Maqat
Embi
Ayagöz
Zaysan
Astrakhan'
Atyraū
(Gur'yev)
Shalqar
Zhezqazghan
Tacheng
Aral
Balqash
Lepsi
Beyneū
Leninsk
(Tyuratam)
Saryshaghan
Taldyqorghan
Ile
Urumqi
Makhachkala
Aqtaū
(Shevchenko)
Panfilov
Yining
Qyzylorda
Syrdariya
Qapshaghay
Shū
Almaty
Korla
Zhangatas
Zhambyl
Türkistan
Bishkek
Ysyk-Köl
Kuqa
Nukus
Shymkent
Tarim He
Baku
Dashhowuz
Urganch
Uchquduq
Wushi
Tashkent
Krasnowodsk
Osh
Nawoiy
Khujand
Bukhoro
Samarqand
Rasht
Charjew
Qarshi
Dushanbe
Amu Darya
Ashgabat
Qurghonteppa
(Kurgan-Tyube)
Khorugh
Mary
Termiz
Tehrān
Mashhad
Gushgy
(Kushka)
Mazār-e Sharīf
Qom

Kazakhstan

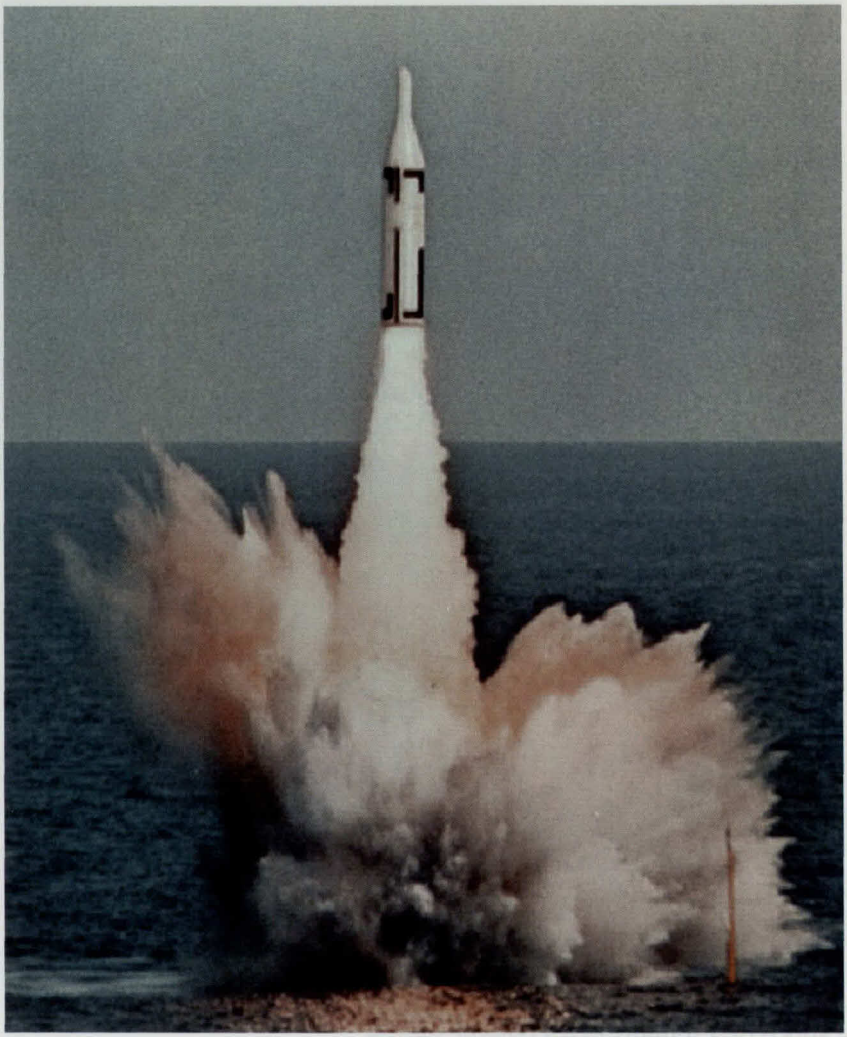


RS-20 (SS-18) Intercontinental ballistic missile

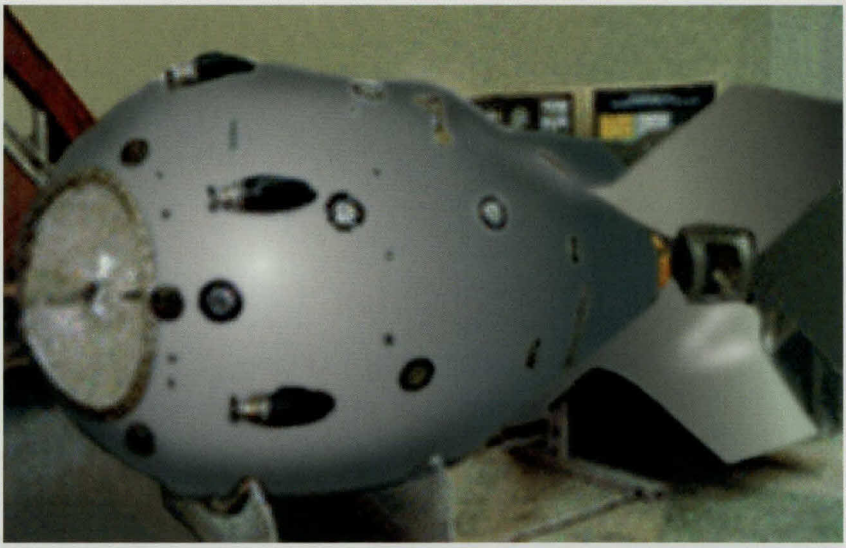
Tu-95M Strategic bomber

Tornado GH.1 Strategic bomber

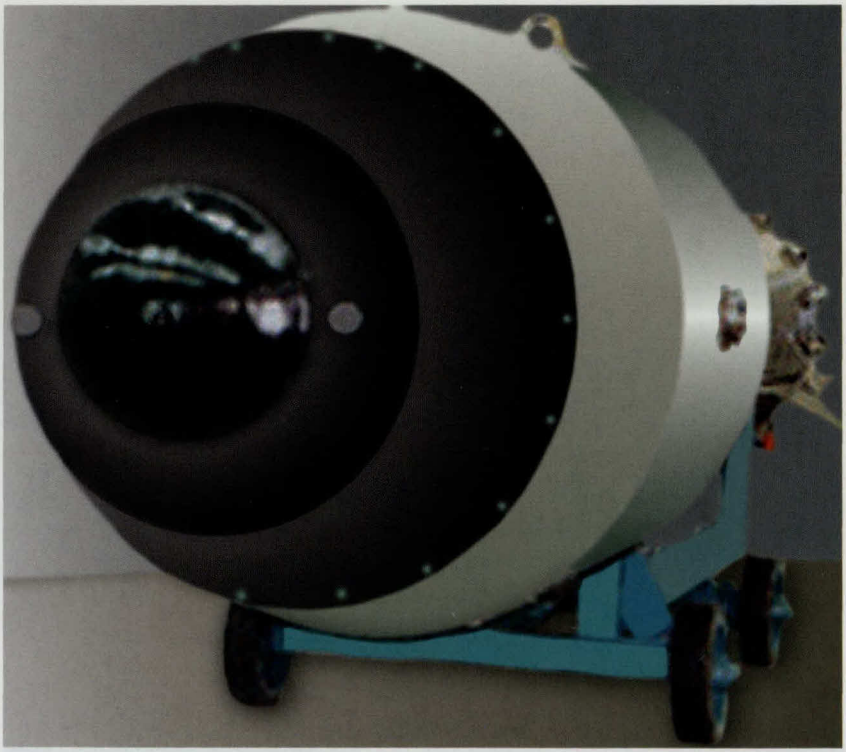
Launch of a Trident-2 D-5 ballistic missile



Underwater launch of a Polaris A-3 TK ballistic missile



The first Soviet atom bomb, RDS-1,20 kiloton yield, detonated 29 August 1949. Photo from Soviet military archives



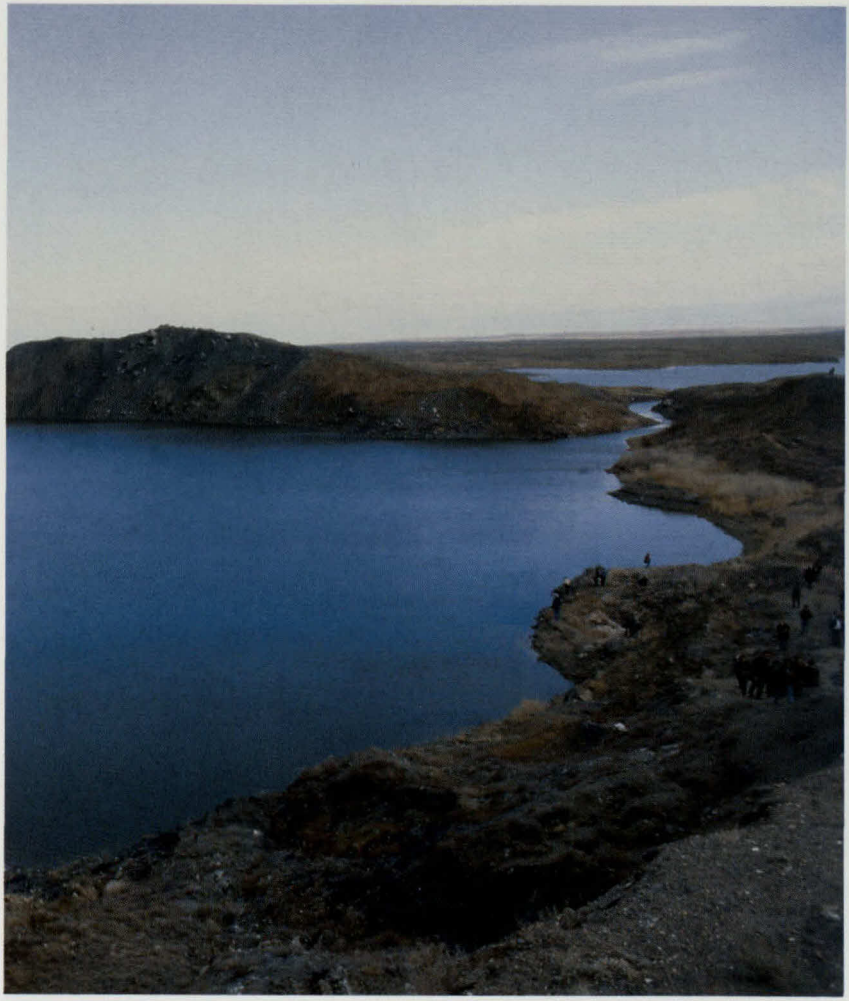
One of the first Soviet hydrogen bombs, which was detonated in Kazakhstan. Yield: 50 MgT

Nuclear testing at Semipalatinsk, Kazakhstan.
Yield: 10.4 Mt. Test date 31 October 1952

Night-time nuclear testing at Semipalatinsk, Kazakhstan with 6.9 Mt yield.
Test date 25 April 1954

Nuclear weapons testing at Semipalatinsk, Kazakhstan. Yield: 3.5 Mt.
Test date 02 July 1956

Nuclear testing on kazakh steppe at Semipalatinsk. Yield: 11 Kt.
Test date 14 September 1957



After nuclear test. Nuclear contaminated or "Dead" lake. 1965

Children are the victims of nuclear testing at the Semipalatinsk Test Site

Kazakhstan's children are victims of the fallout from nuclear testing at the Semipalatinsk Test Site

"Stop nuclear testing!"

One of many rallies of the Nevada-Semei Antinuclear Movement in Kazakhstan. 1991

Kazakhstanis at a rally of the Nevada-Semei Antinuclear Movement in 1991


ЯДРОЛЫҚ ҚАРУҒА ОРЫ
ЖАРЫЛЫС. ЗІЛЗАЛА ТО
ЯДРОЛЫҚ АЛАПАТ АЛАСТА

Rally. 1991

Rally. 1991

Speaking. 1991

President Nazarbayev at the White House. May 1992

President Nazarbayev with President Hosni Mubarak of Egypt.
New York, 1995

President Nazarbayev with President Sharma of India.
New Delhi, December 1996

The Shanghai Five. April 1997

President Nazarbayev greets President Khatami of Iran as he arrives in Kazakhstan for a summit. Almaty, May 1998

President Nazarbayev with President Jiang Zemin of China.
November 1999

President Nazarbayev with Secretary General Kofi Annan of the United Nations. New York, December 1999

President Nazarbayev with Secretary General Jack Robertson of NATO.
Brussels, June 2000

President Nazarbayev with President Vladimir Putin of Russia. 2000

President Nazarbayev with Lady Margaret Thatcher. 2000

Her Majesty Queen Elizabeth II awards the Cross of Saint Michael and Saint George to President Nazarbayev. London, 15 November 2000

yet the explosions continue". Let me remind you that in this case we were dealing not with nuclear charges but with charges using granulated trotyl, or TNT. In fact TNT is widely used in industry and construction and is not in the least radioactive.

Kazakhstan's former military complexes are being re-oriented to peaceful activity; the Semipalatinsk test site is becoming a peaceful test site more open to foreign participants and observers, a neutral zone for solving sensitive issues of nuclear countries in the sphere of nonproliferation.

Demilitarization

The basic goal of conversion projects is the demilitarization of industry, development of the national economy, and the employment of scientists and experts who would otherwise be involved in the production of arms. Kazakhstan's substantive contribution in this area can be seen from the number of new enterprises opened in 1994, including the joint venture Nursat, Kazakhstan's largest satellite communications network, with around $20 million of capitalization; the joint venture KK Interconnect, a pioneer in the manufacture of appliances and personal computers in Kazakhstan, with $12 million of capitalization; and BIOTIM, manufacturing popular medications and created with the help of the Nunn-Lugar fund.

Today's reality is obvious: the world has nuclear and non-nuclear states not tied by safeguards and treaties. We are taking all possible steps to prevent any possibility of using materials and technology of nuclear export for military purposes and make sure the goods are delivered to the right place in accordance with the international principles of nuclear export.

Over the last few years of exporting nuclear and non-nuclear products to foreign markets, Kazakhstan has been following the general strategy of the members of the nuclear club and de-

veloping efforts aimed at strengthening international security. In the 10 years of independent development and establishment of statehood, we in Kazakhstan have managed to neutralize many hot issues, of which the problems of nonproliferation of weapons of mass destruction, materials, and technology of dual purpose take priority. The liquidation of the aftereffects of military activity and the conversion of former military-industrial complex sites, the development of methods of supervising the observance of ratified international treaties on nuclear, chemical, and bacteriological weapons form the basis of reducing the threat. But the changeability of the power relationships in the world, the increase of zones of military conflict, or the heightened probability of self-assertion using new forms of weapons, including nuclear arms, demand the permanent perfecting of the systems of guaranteeing security.

In 1997, a meeting of a joint Kazakhstan-American commission created in Kazakhstan the Association of the Institute on Problems of Nonproliferation. This structure, blending science and politics, is intended to react swiftly to an increase of nuclear tensions in the world, analyzing, predicting, warning, and proposing recommendations on how to avoid possible dangers in the area of nonproliferation.

Kazakhstan, faithful to its decision, has shown the world an example of gallant and elegant construction of a non-nuclear, peaceful geopolitical corridor that has not caused suffering to a single nation or a single person on earth and that is for the good of the brotherhood of humanity.

In the IAEA System...

Probably the most authoritative organization in the area of high technology energy is IAEA – the International Atomic Energy Agency. One could even say that IAEA, as an organization

that is part of the United Nations system, performs the functions of the United Nations in the field of atomic technologies.

Here we see the fundamental consonance of function of these two international structures: passing on technologies (in the United Nations it's called distribution of know-how), security, and safeguards. IAEA's priority mission to use systems of control (safeguards) to expose incidents of possible use of fissionable materials by non-nuclear countries to manufacture atomic weapons, and today it has approximately 130 official members.

Kazakhstan had to become a member of IAEA and, within the Nonproliferation Treaty, to turn over its nuclear objects to the oversight of the atomic United Nations with subsequent inspections for peaceful use.

The General Director of the International Atomic Energy Agency paid a visit to Almaty and we considered his visit quite important. The establishment of relations with IAEA was a mandatory condition of a civilized entrance into the world system of relations based on collective principles of security. The next day, at the Kazakhstan House of Friendship of Peoples, an agreement on safeguards between our republic and IAEA was signed. We pledged to open our nuclear sites to international technical inspections, and IAEA, in turn, pledged to give us exhaustive help in the field of Kazakhstan's energy and fundamental nuclear research. In signing this mutual agreement, the Republic of Kazakhstan became a full-fledged member of the Nonproliferation Treaty and a member of the international world atomic community. And the process of the liquidation of nuclear arms was given a legal basis. All the nuclear objects and materials that had been under the jurisdiction of our republic were immediately placed under the safeguards and supervision of IAEA.

There were nuclear materials in the territory of Kazakhstan that belonged to Russia, and the Russian side was not in the least

interested in having its nuclear materials fall under the control of IAEA. This pertained primarily to uranium that had remained on the territory of Semipalatinsk after the unfinished program on Soviet nuclear engines. The two tons of fuel intended for further use in experimental engines had around 205 kilograms of uranium enriched to over 80 percent. We had no reason to counter the arguments of the Russian side for bringing these materials outside the safeguards of IAEA. An appropriate agreement was developed and signed by the Ministry of Atomic Energy of the Russian Federation and the Kazakhstan side on the use of the Russian nuclear materials at the National Nuclear Center of Kazakhstan.

Demobilizing the Military Atom...

When current affairs and future projects deal with problems relating to the use of a controlled chain reaction and the potential benefits of nuclear power plants, I always think of both the tragedy in Chernobyl and also of the film, *The China Syndrome*. That film was made long before Chernobyl and deals with an accident at an atomic electric plant. The hero was a shift supervisor. With the help of a woman journalist, who happened to witness the accident, he tries to tell people about the danger of further use of the plant. Faced with a wave of disbelief, the hero tries to stop the plant's work himself and in the end dies from a bullet from a special forces team. After this "unfortunate incident", the plant continues working. One of the energy experts in the film refers to the China syndrome, the hypothetical situation in which the reactor block heats up to a temperature so high that it could melt through the earth's core and come out on the surface of China.

This rather apocalyptic film demonstrated all the complexities and dangers of using nuclear energy. The complexities are related to the gap between human self-awareness as being part

of the biosphere and human pragmatism and inanimate constructivism. The superiority of atomic energy over other means of energy production is convincing. In the period of the general euphoria about the "peaceful atom", everyone tied the future development of mankind to the unlimited resources of the reactions of fission of heavy nuclei and fusion of light ones. But then everything changed. Events in nuclear energy demonstrated not only the obvious successes of the peaceful atom, but also the concomitant serious and – sometimes incredibly dangerous – problems.

The unqualified exploitation of the peaceful atom sometimes leads to catastrophic consequences. We all know them: the accidents at the American Three Mile Island and the Soviet Chernobyl plant.

During the explosion in Chernobyl, 30 people died and 237 were exposed to high radiation. But the total number of victims is around 4.8 million – the people who live in contaminated territories in Ukraine and Belarus. Ukraine's agriculture has suffered an almost fatal blow. It is almost impossible to comprehend the psychological pressure undergone by the Ukrainian, Belarus, and other people of the U.S.S.R. in those difficult days. It was the greatest tragedy of the great Ukrainian nation.

The cost of the environmental damage caused by the accident at the American nuclear power plant at Three Mile Island, which took place on March 28,1979, has already reached the astronomical figure of $130 billion! That would have been more than enough to develop a practically danger-free nuclear power plant or completely different types of energy production.

Or take the accident at the Japanese nuclear power plant in Taikomura. The situation there was catastrophic, too. It came very close to causing an out-of-control chain reaction. We all know what that means. Almost 300,000 people were evacuated from Taikomura, within a 10-kilometer radius of the accident.

There are just fewer than 500 atomic reactors of varying sizes working on the planet to create electricity for consumers today. And every year approximately 10 tons of spent nuclear fuel is created. This fuel, extracted from reactors, is considered some kind of nuclear rubbish, and every country has its own way of handling it. The basic recipe is the same: Bury the waste fuel in special capsules at great depths. The real question is: Where? It is a very complex issue and elicits a powerful reaction from the civilian population. No one wants to become an atomic dump because of fears of possible ecological repercussions and negative public opinion. The Russian Federation is dealing with this issue today. It is because radioactive waste must be buried that many countries are reducing their nuclear energy programs or not developing them very actively.

Scientists are continuing to search for ways to improve waste reduction of atomic reactors and thereby preserve the radiation balance of the environment at current levels. If this purely technical problem can be solved, the issue of burying nuclear waste can take a backseat, and the reaction of fission of heavy elements will be used to produce relatively cheap electricity more widely.

In recent times, energy specialists have been concentrating on the so-called closed nuclear fuel cycle. A successful resolution here will make it possible to regard spent nuclear fuel as radioactive waste needing burial. After substantial reworking and repeat enrichment, the greater part of the refined fuel will be used again as part of the active heat-producing assembly for the work of the power plant. And because the cycle will be repeated over and over, we will eventually obtain a material that could not possibly be considered radioactive waste – because it will not be radioactive at all, or at least, comparable to background radiation. If the program for such waste-free nuclear production is developed and realized, I believe it will reduce most of the radio phobia caused by the existence and functioning of nuclear power stations.

Should the use of nuclear energy in our country be developed or halted? Should we build new plants or freeze what we already have?

There is no easy, unambivalent answer. The world situation has created a two-pronged approach to the development of nuclear energy. Most of the countries in the European community are gradually rejecting nuclear plants or have halted active development in this field. But many countries in South East Asia, on the contrary, are actively using fission to produce electricity. Each side has its arguments and reasons.

Nevertheless, I think the most reasonable approach is a gradual increase in nuclear energy only as the danger of power plants is reduced to a minimum. Work on new types of constructions for nuclear reactors is under way in many countries, leaving hope that the atom will not be exhausted.

I think the process of development of nuclear energy in Kazakhstan in the expectation of improved results can be done in two basic stages: development of the raw material base in the first, and the creation of ecologically clean and safe nuclear plants in the second. The first stage in our country is taking on real shape. Gradually and inexorably we are implementing our basic goal in domestic energy – the development of a raw materials component in our exports – natural uranium. We are anticipating optimistic results. According to our experts, we can obtain at least 10,000 tons of natural uranium a year. Gradually increasing our mining, by the year 2005 we could be in third place, behind Canada and Australia.

This program requires further development, and I was pleased to sign an agreement at the Millennium Summit on contracts between our Ulbinsky preliminary enrichment plant and several American companies to produce natural and low-enriched uranium for nuclear power plants and to sell the American technology of producing beryl alloys. In the year 2000 we in-

creased our production of natural uranium by 15 percent, mining approximately 1,700 tons.

As for the second stage in the development of Kazakhstan's nuclear energy, it will be determined by the results of technological progress and world tendencies in energy strategies.

This is the general outline of how Kazakhstan was reborn from a country with the fourth nuclear potential in the world and with a history of almost 500 nuclear explosions into a territory totally free of the military atom. The land's wounds will not heal for long time, the souls of people mutilated by radiation will not soar for a while; the psychological burden of living with exploding atom bombs will not soon pass; and the people's memory will never fade.

We found the strength and courage to free ourselves from the nuclear nightmare, to exorcise "Satan" from the borders of our long-suffering homeland. We did not give in to the temptation of finding ways to keep, even partially, that awesome power and turn it into the main argument of our state.

We made a decision that reflected the will and expectations of the people of Kazakhstan and the state interests of our independent country and that demonstrated the highest level of responsibility before the world community and the future citizens of Kazakhstan.

This was thanks to the new path on which we embarked in 1991 – the path of state independence and sovereignty. Without Kazakhstan's freedom and independence, our path would have been unpredictable and its end a sorry one.

We, the people of Kazakhstan, have freed ourselves from nuclear shackles because we became free, and we could take the exclusively peaceful path only when we became independent.

At the end of the twentieth century, we have put down our nuclear weapons voluntarily and ahead of schedule, and we have shown the world what the twenty-first century must be.

CHAPTER 2

THE NEW REALITY

THE THIRD "NUCLEAR" WORLD

I have often noticed that entrenched stereotypes hold sway over our thoughts and critical perceptions so that we can blithely assert things that have longed stopped being true and that should be regarded somewhat dubiously. One such commonplace stereotype, it seems to me, is the well-known thesis that the multipolarity of the world is a direct consequence of the swift collapse of the Soviet Union. Basing our thoughts on the experience of the last 50 years, we often accept this statement without giving any thought to its veracity or accuracy. But I must say that the most superficial analysis and comparison of current events show that this idea is rather questionable. I see no unambivalent and obvious reasons for asserting that the formation of the multipolar world began with the collapse of the Soviet Union.

It is true that the process of collapse of the U.S.S.R. was accompanied by global geopolitical changes, a reorientation of geostrategic interests of many state communities, and a reevaluation of the world-view of many countries – especially the former Soviet republics that moved onto the democratic path of development.

But it should not be forgotten that the era of the bipolar world existed under the sign of a mutually declared and mutually dependent balance of power; that is, it was based exclusively on the power component of relations. The unit of measure of that power parity was nuclear arms.

In that sense, the bipolar confrontation has not vanished completely. We must not forget that Russia is still a nuclear power. It managed to do more than simply preserve its nuclear arsenal and still has nuclear potential comparable to that of the United States. Russia, as one of the main inheritor states of the Soviet Union, rejected its global imperial ambitions but retained its own developed military infrastructure, which allows it

to realize the entire complex of production and improvements of atomic weapons.

Gone is the intransigent and fatal confrontation between the U.S.S.R. and the United States. But the nuclear potential remains, still in accordance with the concept of mutual assured destruction that requires political balance between Russia and the United States. Russia is still an equal partner of the United States, with membership in the United Nations Security Council, and has its own independent foreign policy, remaining a center of attraction for many countries.

This is all direct evidence that the world's bipolarity has not disappeared, as it is mistakenly suggested. It has merely softened its rough edges and is no longer expressed in the categorically antagonistic forms it used to take.

But then what about the numerous assertions that the world is becoming multipolar? Are they wrong? I don't think so. However, the concepts of bipolarity and multipolarity should not be regarded as being chronologically separate, as it so often is presented today. Multipolarity has not yet fully replaced bipolarity, and for the time being they coexist. Because of this strange symbiosis *bipolarity has become less obvious but the two systems of political interactions continue to develop in parallel.*

The circumstances of the birth of the multipolar world are completely different from and independent of the remaining bipolar world. In contemporary historical conditions they are simply superimposed on each other. What is the factor of the birth of the multipolar world if not the end of bloc confrontation?

The twentieth century has taught us to perceive the world as a form of universal struggle between two social systems; in fact there has emerged a third way, a world that has developed on its own – barely visibly – an often unique path. This parallel path has led to the rise of a new reality – a reality in which the concept of "superpower" is gradually wearing away. In this view,

new players on the international scene are the regional states or, as they are also called, regional poles or regional centers of power. They are becoming the main subjects of the new multipolar world, and that is where it would be most dangerous to allow the spread of nuclear arms.

The end of the twentieth century saw an important event when India and Pakistan openly announced their nuclear ambitions to the world. The balance of power shifted, and nuclear weapons ceased being the prerogative of the Big Five. Contrary to the generally accepted and seemingly inviolable regime of nonproliferation, the number of owners of atomic weapons has grown. There is a new world geopolitical pole – the third nuclear world. The thesis of world multipolarity has been given real content. This new multipolar world, unfortunately, has retained some characteristics of the former world order – the unabashed pursuit of geopolitical power. As a result, there is a real danger of humanity developing along the path of global nuclearization.

Open demonstrations of nuclear arms by the new regional nuclear states push threshold and pre-threshold countries onto the next step of the arms race, toward a chain reaction of nuclearization on the regional level. The scale of this arms race could reach dangerous levels far exceeding the former nuclear race of the two superpowers. If there is a new nuclear race, it will no longer be bilateral and covered by agreements. It will be general, untamed and global. That situation could lead to an incredible complication of the issues related to disarmament, nonproliferation, and global and regional security.

In the new conditions of nuclear multipolarity, atomic weapons can turn into a routine instrument of persuasion in regional politics. The result could be the real threat of small regional wars using nuclear arms.

As president of a state that rejected nuclear arms and entered the new century with peaceful intentions, I am worried by

the danger of a qualitatively new twist in an uncontrolled planetary arms race. The formation of a reliable system of global and regional security in Asia and the entire world is within the sphere of vital interests of Kazakhstan. The second part of this book is an attempt to show how the new reality, the third nuclear world, came into being, to understand the new qualities of nuclear arms in this era of multipolarity, and to present my thoughts on the appearance of new dangerous threats to humanity.

This book does not pretend to define the contours of the future world. However, I will consider my goal accomplished if after reading this book, all of us think once again about the only possible non-nuclear future for humanity and about the prescriptions that will allow us to achieve it.

SOUTH ASIA: TWO REGIONAL SUPERPOWERS

Today it has become fashionable to follow Zbigniew Brzezinski's description of the planet as a global chess board. If we use the terminology, we could say that in 1998 a chess game was played in South Asia for the regional nuclear championship. The rather standard E2-E4 opening was made by India with its five explosions of nuclear warheads in the Tar desert test site near Pokharan. And among the five devices with yields of 15 to 20 kilotons was a hydrogen bomb of 43 kilotons. Pakistan, without delay, responded with the no less standard E7-E5 – six experimental detonations of atomic charges of 5 to 10 kilotons at a test site near the Chagai mountain range.

It was these nuclear detonations, made in the short period between May 11 and May 30, 1998, in the Indian state of Rajasthan and the Pakistan province of Belujistan, that heralded the start of a new geopolitical era. It affirmed the new reality – the multipolar world order – and at the same time, the emergence of the third nuclear world.

The Republic of India and the Islamic Republic of Pakistan are trying to develop in the traditional scheme – by growing muscles and trying to become full-fledged nuclear powers. The desired nuclear fulfillment wul bring these countries, in the belief of their leaders, an expansion of modern early warning systems, control of tactical nuclear arms, and modernized delivery and capture systems.

India and Pakistan have given ample proof to the world that they possess nuclear capability. It is hard to say how many warheads either side has at the moment. But potentially, India, for instance, had all the necessary resources and components in 1998 to produce at least 455 nuclear warheads (or already had them). Islamabad, in turn, had the means to produce at least 105 warheads. The total nuclear arsenal in South Asia could be quite high already.

A country can be considered truly nuclear if it possesses not only nuclear weapons but has the adequate technology to deliver them. India's medium-range missile launcher, Agni, can carry nuclear charges up to 2,000 kilometers. It is now working on an intercontinental ballistic missile called Surya, which will be able to reach targets 8,000 to 12,000 kilometers away. India is also working on further modernizing the Agni class rockets. In particular, Indian military engineers have developed the tactical missile Agni-2, which can carry nuclear weapons of 700 to 800 kilograms up to 2,500 kilometers.

It is not surprising then that Pakistan responded to these Indian missile programs with its own projects for developing delivery systems for nuclear warheads. Islamabad has been working for a long time on modern missile types. For instance, the ballistic missile Hider-1, at Pakistan's disposal, can carry an atomic weapon at the cosmic speed of up to 16.6 kilometers per second. Hider is the first missile that was developed exclusively using Pakistani scientific and technical potential. The previous Shakhin missiles

were copies of foreign-made missiles, and modifications of the solid-fuel Sakhin rockets continues. In particular, while the first tactical Shakhin-1 had a range of 800 kilometers with a throw weight of up to a ton, Shakhin-2 can carry the same weight up to 2,200 kilometers.

On April 13, 1999, the Pakistani army also tested Ghauri-2, a medium-range ballistic missile that can carry a nuclear charge weighing up to 600 kilograms for a distance of 2,200 kilometers.

The new address of the new nuclear missile arms race has quite clearly become South Asia.

There is a very simple-seeming but very important law in biology. Behr's law, states that the development of an embryo repeats the development of the species in general. Take human development: in the womb, a fetus grows and loses a semblance of gills, tail, and other signs of evolutionary development. The evolution of a human embryo inside the body for nine months recapitulates the evolution of the entire species, the entire animal world, over hundreds of millions of years.

If we apply Behr's law to the modern political world, we can draw from a very simple but powerful principle: the dynamics of the arms race on the regional level will probably follow the evolution of the nuclear arms race in the era of global confrontation.

In the regional rivalry between India and Pakistan, further events could repeat the worst-case scenarios of the Cold War. There is a real danger of an expansion of the nuclear arms race on the regional level. Escalation of this race could lead to bringing in other countries from the Asia region. At the same time, bearing in mind the absolute uselessness of nuclear weapons for solving regional contradictions and local problems, the goal of that nuclear race will not only not be commensurate with the costs but could lead to unpredictable results. We cannot underestimate the dangerous consequences of nuclear confrontation on the regional level.

After the nuclear tests in India and Pakistan, I thought long and hard about what had happened. Why did these two countries, our neighbors, decide to go against the tide of opinion of the world community and violate the fragile equilibrium and tranquility that formed in the world after the end of the nuclear bloc confrontation?

Members of the various Eurasian states began showing concern about the threat of nuclearization of South Asia back in the early 1990s. I remember, for example, that in May 1994, at a press conference in Dacca, Bangladesh, the deputy prime minister and Minister of Foreign Affairs of the People's Republic of China, Tsian Tsichen, stated the opinion that "the arms race in South Asia will not bring anything good to any of the nations. It can only turn into a complication of the situation in that region". From the point of view of global security, Tsian Tsichen's worries were not in vain. The instantaneous birth of two nuclear powers in South Asia had the most serious repercussion on the situation in Eurasia and elicited a stormy, unambivalent reaction on the other continents.

After the bomb explosions of 1998, India and Pakistan were condemned by practically every country in the world. The United States tried several times to use its political influence on Pakistan and to persuade Islamabad to join the Test Ban Treaty unilaterally. And many countries introduced economic sanctions against India right after the tests. But both India and Pakistan could have foreseen all this, and I'm sure that they did before the military pushed the atomic button.

Then why did they decide to legalize nuclear weapons despite everything? The decision is even stranger when we remember that India and Pakistan were almost among the most radical adherents of total nuclear disarmament.

It would be naive to assume that India could be kept from possessing nuclear weapons by the threat of economic sanc-

tions. The chairman of the Indian Chamber of Commerce expressed a characteristic point of view on this long ago: "You can't shunt aside a country with over 800 million people that easily". In recent years the economic potential of the Republic of India, a country with a population of a billion, has grown constantly. Developed industry and successful economic policies allow India to realize its own national programs in the high-tech area. This applies to fundamental and applied research, space and satellites programs, supercomputer development, atomic research and software in many forms. The high level of Indian science is recognized throughout the world. We all know that there are many Indian scientists working in the most advanced laboratories and research institutions throughout the world.

India's economy is self-sufficient enough not to be sensitive to a possible regime of economic isolation. However, in testing nuclear arms, this country shook the foundations of the entire global system of nuclear security. And that, of course, is much more important than all the rest.

The more I think about why Delhi and Islamabad decided to embark on that dangerous and slippery path of owning nuclear weapons, the more I tend to believe that it was the general regime of global security that promoted the realization of their nuclear ambitions. Rather, the growing awareness of the imperfections of that regime was the impetus.

Since the passing of Nonproliferation Treaty, the number of nuclear weapons on the planet has not only not decreased, it has grown substantially in many countries of the world, particularly in the Eurasian part of the planet. Nor did nuclear testing stop; in fact nuclear weapons were perfected and the total capacity has surpassed all conceivable limits.

It would be appropriate to recall that back in the mid-1950s India spoke out with determination for a total and unconditional ban on testing of nuclear weapons all over the world, regardless

of whether the tests were military or "peaceful". It was Jawaharlal Nehru, then prime minister of India, who proclaimed this call from the podium of the United Nations in 1954. It was Delhi in the 1960s that took the most active part in the development and preparation of the Nonproliferation Treaty in which India is not participating at the moment. Back then, India's position was more than concrete and radical. It insisted that the points of the two fundamental treaties on nonproliferation and the test ban should have specific deadlines for an end to testing. More importantly, it sought deadlines for the total liquidation of the nuclear potential of the states with nuclear weapons.

India's position on that issue was unchanging for a long time. It is enough to recall the Delhi declaration of 1986 on the principles for a world free of nuclear arms and violence, written in the best traditions of Mahatma Gandhi's policy of nonviolence. But unfortunately, India's position in the final version of the main nuclear treaties was not taken into account and India decided it could not retain its juridical membership in them. At least, until its opinion was not included.

Pakistan in those years was also an adherent of the concept of purely peaceful regulation of nuclear security issues. After Buddha's Smile (the code name for the first Indian nuclear device in 1974), Pakistan offered making the territory of South Asia a non-nuclear zone. As proof of its sincerity, Pakistan proposed signing jointly with Delhi the treaty on nonproliferation of nuclear weapons as non-nuclear states. But at that time, India was more concerned with the situation around the regime of nonproliferation and its own views of the geopolitical distribution of nuclear power in the world and, unfortunately, did not accept Islamabad's proposals.

So, if we remember the determined and focused efforts of Delhi and Islamabad toward universal nuclear disarmament, even if they were in the past, it would not be fair to subject them

now to unconditional condemnation. The condemnation of India and Pakistan and the economic sanctions against them were too late and, in fact, a reaction that could have no effect on the radically changed situation. Today we need a new vision, new collective efforts directed not at putting superficial cosmetic stitches over gaping nuclear wounds but at finding medicines that will heal a sick organism – the extremely imperfect and conservative system of global and regional security.

India and Pakistan can and must take steps toward universal, concrete disarmament. They must spur peace-making efforts and further integration through treaties of nuclear and non-nuclear states, which will undoubtedly promote global and regional security.

As the delivery systems for nuclear arms in these countries improve, the potential zone of destruction is expanded. Today it is clear to everyone, I would think, that *modernization and perfection of nuclear arms and delivery systems on the regional level will inevitably cause "regional" nuclear confrontation to be gradually transformed into global confrontation.* This potential circumstance fatally disrupts the system of security that has formed over the years and forces many countries to participate in some way in arms races that are geographically remote.

Bearing in mind the long history of confrontation between India and Pakistan, and numerous military conflicts, there is a great danger of a new conflict erupting that could turn nuclear. The territorial dispute between India and Pakistan around the long-suffering state of Jammu and Kashmir is the greatest cause of the flow of mutual accusations and demands. Each side marshals its arguments for being the original owner of that state. Islamabad refers to the Muslim majority of Kashmir's population. Delhi expresses extreme displeasure with Pakistan's interference in Kashmir affairs. Despite numerous negotiations and consultations, beginning with the 1972 accords in Shimla, the status quo

of the mutual distrust remains and, unfortunately, there is no sign of constructive attempts to resolve this ancient feud.

Naturally, the other countries of the region cannot help being concerned over the expanding nuclear arms race between the two. If they ever have a nuclear conflict, it will take a significant number of human victims (considering the population density of those countries) and will lead to catastrophic ecological consequences for the region.

The world has not had experience with large-scale use of modern nuclear weapons. However, based on the experience of the bombing of the Japanese cities of Hiroshima and Nagasaki by comparatively weak nuclear charges and with the knowledge of the aftereffects of nuclear testing at the Semipalatinsk test site, I can say without hesitation that the use of even tactical nuclear weapons in such a conflict would be catastrophic.

Third, and perhaps most importantly, the actions of India and Pakistan have created a real danger of torpedoing the existing international regime of nonproliferation of nuclear weapons. It is clear that the nuclear ambitions of India and Pakistan are contrary to the general tendencies of nuclear disarmament and are in direct contradiction to the Nonproliferation Treaty. However, the purely formal procedures of the Nonproliferation Treaty and Comprehensive Test Ban Treaty have not been violated, since neither India nor Pakistan is a member. In that sense, these two states are becoming the informal leaders of a nonalignment movement, setting a bad example for many countries. The nuclear tests done by India and Pakistan have set a time bomb under the entire system of guaranteeing global nuclear security, as it now appears that the Nonproliferation Treaty and Comprehensive Test Ban Treaty are incapable of preventing the proliferation of nuclear arms. If the process of proliferation of nuclear arms is not stopped today, tomorrow it may become completely uncontrollable.

I do not want to be a Cassandra on this issue, but if the international situation around political confrontations does not change in the near future, the probability of a local nuclear conflict in some area of the globe can only grow. That is why it is so important to search for answers together today on what to do about the undermined system of global and regional security. The old forms of safeguarding security are obsolete in many ways – both conceptually and in the mechanisms of execution.

The balance of power, deterrence by threat, "assured destruction", destruction many times over, cannon diplomacy – all these arguments should remain in the last century. We must accept and recognize their archaic and obsolete nature. The new age and the new millennium need a new language of diplomacy. New tools must be created that we can use to create an elegant and stable system of global and regional security. The twenty-first century must not become the triumph of the theory of the clash of civilizations or a monotonous end of history. The new era must become the triumph of the theory of non-conflict, based on the principles of rational need and sufficiency.

I consider the millennia as a new Rubicon. *Either we continue on the path of further escalation of conflict in dozens and hundreds of regional nuclear parities – a path that will lead inevitably mutually assured destruction, or we reject the diplomacy of power and uncompromisingly and unconditionally embrace the necessity of local and global disarmament.*

Inevitably we must come to the mobilization of collective efforts in the search for a new construction of the system of global and regional security. It will be based on three principles: universality, unconditional and mandatory disarmament, and mutual measures of trust.

THE NEW RUBICON: THE PLANET'S HOT SPOTS

If efforts are not made to perfect the mechanisms of security, the modern system of global security might develop serious cracks. And if maintenance work is not done or if the construction is not changed – that is, if constant peace-making efforts are not made and new forms and paths are not sought – then the present system of global security might collapse under the pressure of external circumstances governed by the threat of regional conflicts turning into nuclear ones.

The precedent of creating and openly testing nuclear arms in South Asia could lead to an uncontrollable process of legitimization of its production or scientific research in other threshold states.

In 1995 there were 39 countries with the capacity of producing the atom bomb, or, in the worst case, a nuclear device. New conflict points are arising, centers with the desire to make nuclear arms a national policy. The multipolar world is taking on a clearer outline with more details in the picture of various states on the regional level. There are new ties through conflict, a new system of relations based on the diplomacy of regional nuclear cudgels.

This is an indication that *there is a real danger of proliferation of nuclear arms uncontrolled by the world community.* This danger is greatly increased by complementary factors.

First of all, it must be remembered that besides India and Pakistan, which have openly announced their nuclear ambitions, there are quite a few so-called threshold states that have capability for nuclear arms production and, according to the press, could be working on their development in top secret conditions. Over the last decade the mass media have portrayed Iraq, North Korea, Iran, Israel, and South Africa as threshold states. At the

same time, there are at least 20 countries with ballistic missiles capable of carrying atomic weapons and other weapons of mass destruction. And many of them have rockets with a large radius of over 1,000 kilometers.

Several times there has been discussion of the possibility of Israel producing nuclear arms. According to experts from Islamic countries, Tel Aviv may already have a nuclear arsenal or at least the necessary components for producing atom bombs. There has been as much recent coverage of the possibility of nuclear arms production in North Korea. It is said that Pyongyang has a cache of enriched plutonium for at least six nuclear warheads of medium yield. The source for this weapons-grade plutonium could be the 25-megawatt heat reactor in Yongbyan, north of Pyongyang, which can produce almost 10 kilograms of highly enriched plutonium at a time. Besides this, North Korea has refineries and deposits of natural uranium ore in Sunchon, Pakchon, and Sinpho.

Yet another threshold state, a potential possessor of nuclear arms, is Iraq. In particular, the press has carried warnings that by 2004 Baghdad may have all the necessary components to produce an atom bomb. At the very least, Iraq has the technical capabilities for that. Iraq acquired the Isis plutonium extractor, a research nuclear reactor, Osiraq, in the Tuwaitha desert, which works on 93 percent enriched uranium, and several tons of natural uranium from Portugal, Brazil, and Nigeria.

The Republic of South Africa, which in 1988 officially admitted having its own military nuclear program, today may have all the necessary infrastructure for producing nuclear arms, according to experts. The state has the scientific and technical know-how and the industrial base, including the technology for producing enriched uranium. In the early 1970s a breakthrough in nuclear research allowed them to build a plant in Valindaba to enrich uranium. By the early 1980s, South Africa created the

first atomic explosive device on the African continent. A nuclear test site was even built in the Kalahari Desert for underground testing. By the time South Africa joined the Nonproliferation Treaty, it had a significant stockpile of highly enriched weapons-grade uranium that could be used to make dozens of nuclear warheads. The industrial missile potential of the South Africans would allow them to start producing medium-range ballistic missiles at will.

There is information about similar nuclear readiness in other countries – including Algeria, Syria, Brazil, and Argentina.

On the whole, the existence of threshold states that could develop atomic weapons, even if they have suspended their military nuclear programs for the time being, is an indicator of a dangerous trend – the threat of proliferation of nuclear arms regionally is a realistic one. And there are many factors which may not promote but certainly ease the way to possessing nuclear arms.

Despite the overwhelming military power of nuclear arms, the improvements in ordinary arms are continuing as well. If the priority in nuclear weapons is assured destruction, conventional weapons are being improved in terms of precision and universality. Operation Desert Storm showed that military units using modern weapons and military technology could successfully and almost without casualties carry out large-scale operations to suppress the enemy's military might and destroy his strategic infrastructure and morale to the point that it loses the psychological strength to resist.

I remember very well how the mass media covered Desert Storm. Watching reports from the Persian Gulf, I often got the impression that there was no military action at all and that we were watching a detailed report about United States and North Atlantic Treaty Organization (NATO) maneuvers – paratroopers and tank units practicing landing and military action in desert

conditions, fighters and bombers doing training flights over a conditional enemy's territory, and so on.

The incomparable superiority of the military technology of the United States and NATO was demonstrated by Iraq's much less advanced weapons never could be used at full strength. This was not a shoot out, but a planned and systematic destruction of enemy objects with precision and predetermined guaranteed results.

But such high-quality conventional weapons came at enormous expense, costing hundreds billions of dollars. Not all countries can afford such expensive development of modern weapons, and effective use of precision arms with new technologies, including laser ones, is impossible without the coordinated participation of all troops and subdivisions, including space satellites.

As a result, a paradoxical situation exists in the world. The cost of supermodern forms of conventional weapons has crossed the threshold of what it takes to build nuclear weapons. We may end up with a situation in which the cheaper cost of nuclear arms will force the low technology countries to build their military programs around the acquisition or creation of nuclear arms, rather than the modernization of conventional weapons. The clear comprehension of the fact the developing and unaligned countries will not be able to keep up in the arms race with the advanced countries may force them to take the nuclear path.

It is important to note that acquiring nuclear arms presents no impossible technological difficulties, as it did some 20 to 30 years ago. The level of technology today permits almost any state with some scientific potential to design and build a simple nuclear device.

And there is also the factor of "brain drain" to consider, brought on by the economic difficulties in numerous countries that have military nuclear technology or are further along the

path. Many of the world's top experts could potentially offer their skills to other threshold states.

In this situation the critical element in military nuclear programs is getting the necessary amount of fissionable materials – high-grade uranium or plutonium. But even this obstacle is not insurmountable. For instance, back in 1995, Secretary General of the United Nations Boutros Boutros-Ghali had to admit in his speech at a conference of the member states of the Nonproliferation Treaty that "smuggling of nuclear materials is not only a danger, but a frightening reality". In 1996 alone, official statistics from IAEA show that 53.7 tons of extracted plutonium were produced, enough to make almost 2,000 devices; 528.2 tons of plutonium in radioactive fuel and 4.5 tops of processed plutonium in fuel assemblies; 20.8 tons of highly enriched uranium, enough for 300 atom bombs; 48,620 tons of low enriched uranium; and 105,431 tons of natural uranium and thorium. There are no firm guarantees that even the smallest amount of these materials will not fall into the hands of interested parties?

In these conditions, there is the danger that interested countries or other parties can acquire all the necessary components for nuclear arms.

There is a great number of nuclear reactors using enriched uranium in the world that could unwittingly become the source of components for atom bombs. This could be aided by the not very perfect system of controls over the export of nuclear materials. Using diplomatic mechanisms and other tools of pressure intended to limit the proliferation of nuclear arms, including economic sanctions, has proven ineffective, and in some cases, actually aids threshold states.

A measure known as the "nuclear deal" was developed to prevent proliferation of nuclear arms. The great nuclear states promised significant economic or financial compensation to countries already on the way to creating nuclear arms and pre-

paring for demonstration or secret tests. The idea of this deal was to stop those countries from continuing their work but in effect it rewards people for achieving nuclear status by compensating them for significant advances.

Another global factor promoting the proliferation of nuclear weapons is the almost universal instability of international relations. With the end of the bloc confrontation, the world unfortunately did not become completely stable. Today, in numerous regions around the planet there are political, economic, ethnic, and religious issues that serve as a breeding ground for local armed conflicts. Many of these conflict zones may end up using tactical nuclear weapons.

In addition to all this, in recent decades various extremist terrorist organizations have become significantly radicalized and their leaders speak openly of wanting their own nuclear weapons. For instance, international terrorist Usama bin Laden announced through the media that he was prepared to spend $1.5 million to buy the components for a nuclear bomb.

The world community has no real mechanism of control over the production of nuclear arms and the activity of nuclear objects that can create the needed components for production. At the same time, there are almost limitless financial resources of many terrorist groups and drug cartels, which can spend a significant amount on the materials needed to produce an atom bomb or a nuclear device, like a land mine.

Here I must note that you don't need a lot of nuclear fuel to make an atom bomb. A full-fledged nuclear charge needs only three to five kilograms of plutonium or 15 to 20 kilograms of highly enriched uranium.

The relative ease of producing atomic weapons and the increasing power of well-heeled terrorist organizations is in my opinion perhaps the biggest threat to global and regional nuclear security. Using the language of Arnold Toynbee, international

terrorism on the atomic level is humanity's greatest challenge. In the last 10 years various terrorist organizations around the world have committed around 935 acts of violence in which more than 260,000 people have died.

There is every reason to suppose that terrorism in the first half of the twenty-first century will be defined by conventional weapons and a struggle to acquire weapons of mass destruction. Think of the inhumane chemical attack by Aum Sinrike in the Tokyo subway system.

Unfortunately, there are many factors sustaining the transition of terrorism to a higher technological level in today's world. The sharp increase in armed conflicts on the regional level; the high profitability of terrorism; its broad application as an instrument of geopolitical intrigue; and its switch to a higher, state level as a method of effective and radical political struggle. I'm not even mentioning exotic forms of terrorism that can be even more harmful than standard terrorism, for instance, information warfare or virtual terrorism.

Here the danger lies in its absolute uncontrollability. Say, for instance, the publication in cyberspace of recipes for homemade preparation of chemical, biological, and even nuclear arms. Distributing this type of information about illicit production of weapons of mass destruction threatens to expand terrorist activity.

And now we are seeing more worrisome events relating to the escalation of various extremist and terrorist groups. We feel constant tension in the southern regions of the C.I.S.; it is perfectly clear that terrorists in various parts of the planet are going to obtain more and more weapons unless that growing desire is transformed into a new quality.

The testing of nuclear weapons has lowered the general level of security in Asia and particularly in Central Asia. It seems to me that the weakening of the security regime is related in great

part to the legalization of the third nuclear world and the subsequent development of a multipolar, polynuclear world. Security, especially on the regional level, is threatened by the appearance of additional functions or uses of nuclear weapons in the modern multipolar reality.

In this multipolar era, there is a dangerous tendency for nuclear weapons to stop being a global method of deterrence and to take on the visible attributes of a standard diplomatic tool on the regional level. It is taking on the deterrence function and strengthening persuasion and direct or oblique political blackmail. The single dominant function of atomic weapons breaks down into numerous components, and they can gradually turn into a multifunctional weapon of tactical significance for the real resolution of conflicts on the regional level.

The danger of the universality of nuclear weapons is that it can be regarded, albeit in limited forms, as a means of solving the most varied problems: those of demarcation lines and territory; increasing a state's role on the international scene; domestic political conflicts; ethnic issues, and preventive measures against the real threat of terrorism, extremism, and separatism. So I can say that nuclear arms, while still instruments of global politics, have taken on a new quality and become instruments of local politics on the regional level.

Neither the United States nor the U.S.S.R. had any profound and fatal motivation for possessing weapons of mass destruction. The total power of their conventional weapons and their military infrastructure were more than enough to solve potential problems and resolve conflicts on regional and global levels. At first, the concept of total destruction of the ideological foe was so embryonic that it could not be taken seriously. Strategic plans were built not on the liquidation and total destruction of a hostile state but were oriented on the means of reorienting systems of social relations to match their own.

For the Soviet Union, that idee fixe was expressed by the idea of world revolution, which was expressed not in violent suppression and destruction of the United States but in establishing a communist regime on the territory of its foe. The United States was oriented on a universal and indubitable victory of the American way of life and of democratic values in the Soviet bloc without any serious plans for the total destruction of its enemy.

Nuclear weapons in that era of global confrontation were a means of fighting the phenomena that were perceived as threats to humanity – the threat of fascism and total militarism, real threats that affected everyone, regardless of social or class membership. This was the main reason or motivation of a global character that literally forced people to turn to nuclear weapons "in the name of humanity".

It was the global danger of fascism and its world domination that was used by Albert Einstein and other scientists in their argument to Franklin D. Roosevelt to make his historic decision to expand the program on the creation of the atom bomb. After the complete victory over the ideas of fascism, militarism, and national exceptionality, the bomb, which had been justified in being born, now had to justify its further existence. It seems to me that it was at this juncture that the wrong and fatal decision was made, allowing the weapon of mass destruction to go on living.

The same scientists who had recently insisted on the creation of the awesome weapon were now calling for its destruction because the reasons for its existence were liquidated. But the bomb clung to life, and it was impossible to get the genie back into the bottle. It took on independent form, and justifications were found for nuclear indulgence.

In the ideological sense, societies were perceived as the source of global danger, and even as a threat to all of humanity. Western political thought came to the idea of the world danger of communism. Soviet ideology responded with impressive

theories of the dangers inherent in the imperialistic threat. The image of the enemy as a threat to all mankind became the justification that allowed the bomb to live and to evolve unhindered in quality and quantity.

Here we find an interesting situation. In the modern world, states wanting regional sovereignty have trouble justifying their real and potential nuclear ambitions with global or humanitarian factors. Imagine the leaders of Iraq or North Korea accusing Kuwait or Seoul that their way of life and economic development was a threat to all humanity – and using that to get a vote of "nuclear" confidence from the rest of the world or going ahead and developing a national nuclear program anyway for ideological reasons.

A reasonable resolution of conflicts in a nonviolent manner is one that allows the parties to achieve mutual interests on the basis of a compromise or optimal decision. Nuclear weapons cannot by definition be a means of solving conflicts, because the very manifestation of a nuclear weapon leaves both sides without any interests in common and creates a whole avalanche of new problems that make both sides forget why they ever had a conflict in the first place.

Nuclear weapons at best can serve only as a means of deterrence in a global sense. This does not apply only to threats relating to destructive manifestations of a misanthropic ideology or extremely aggressive regime. It applies to dangers to humanity and just people – for instance, a threat from space or an act of nature that can be derailed by the use of atomic weapons.

Allotting nuclear weapons additional functions and qualities is illogical and inappropriate. The very attempt to do so is a direct threat to all humanity. Even the potential use of nuclear arms for solving regional issues such as ethnic, border, or domestic disputes is just as dangerous as using a cannon to kill flies in your house.

Most importantly, nuclearization on the regional level severely increases the probably of its employment, perhaps with fatal inevitability. This is related to the radical difference between nuclear weapons in the bipolar era and in the era of regional nuclear states. The current international system of nuclear security, created in a period of bloc confrontation and oriented on assuring parity between the large nuclear powers, is unable to limit the process of proliferation of nuclear weapons. The time has come to modernize the system, taking into account the new geopolitical realities.

THE NONPROLIFERATION TREATY: THE DEMAND OF THE TIMES AND STATES

Stunned by the horror of Hiroshima and Nagasaki, humanity has often tried to shackle the nuclear monster. It is no accident that at the dawn of the nuclear world many people, including the creators of the atom bomb, foresaw the danger of its spread across countries and continents. But I must note that the exceptional hardiness of the nuclear bomb sometimes seemed to take on mystical forms. Despite joint efforts to pass numerous international acts and treaties to limit the existence and distribution of atomic weapons, the nuclear genie was living its own independent life and would not obey its creators and owners.

The collective efforts of the world community to slow down the spread of nuclear arms have often been rewarded by significant successes. Unfortunately, we have not been able to destroy nuclear weapons completely, but at least we've managed to restrain their spread throughout the world.

Subsequent milestones on the road to limiting proliferation of atomic weapons gradually and inexorably led to the idea of creating a constructive mechanism that would respond optimal-

ly to the interests of global nuclear security, guaranteeing and supporting the regime of nonproliferation of nuclear arms. In that process the main role in the fight against nuclear diffusion was played by the great majority of countries not involved in the mad arms race.

The first document to attest to the limitation of the geographic spread of nuclear weapons was an agreement in 1959 that proclaimed the Antarctic to be free of nuclear arms. It stipulated that no nuclear state could ever under any circumstances have the right to place nuclear arms on any spot on the southern continent of Antarctica. The agreement was the first to demonstrate that nuclear powers are quite capable of having a dialogue that is not based on the language of force and, even more importantly, which can support and promote the interests of a non-nuclear humanity. The agreement gave hope to countries that saw in it a real opportunity to limit nuclear danger and eventually destroy all atomic and thermonuclear arms.

The Cuban Missile Crisis of 1962 led some Latin American countries to the idea of creating a non-nuclear zone in South and Central America. In 1962 Brazil initiated the agreement, worried about future incidents like the Bay of Pigs. But it took five years of negotiations and consultations before the Treaty for the Prohibition of Nuclear Weapons in Latin America was signed in Tlatelolco, Mexico City.

Also signed in 1967 was the International Treaty on Outer Space, prohibiting nuclear arms on space near earth, on natural satellites, and on other space objects of the solar system. The International Seabed Treaty of 1971 freed the ocean floors of nuclear weapons. In accordance with the Treaty of Rarotonga of 1985, the southern part of the Pacific Ocean also became a non-nuclear zone. This zone included Australia, New Zealand, Papua-New Guinea, the Solomon Islands, Nauru, Vanuatu, New Caledonia, and other islands of Oceania.

In 1995, in Thailand, the Bangkok agreement created a non-nuclear zone for the Association of Southeast Asian Nations (ASEAN) countries. It came into force in March 1997. The Bangkok Treaty, however, unlike other analogous agreements, did not ban burial of radioactive wastes in the waters of the ASEAN countries.

The Cairo Treaty, signed in April 1995, created a non-nuclear zone in Africa. All the countries of the African continent signed the treaty except for Morocco, which was having political disagreements with the Organization of African Unity.

On August 28, 1997, in Almaty, Kazakhstan, Uzbekistan, Kyrgyzstan, Turkmenistan, and Tajikistan signed the Almaty Declaration, which proclaimed Central Asia as a territory free of nuclear arms.

The international community always considered the idea of creating nuclear weapons free zones as one of the most effective means of combating the spread of the monstrous weapons. UN Resolution No 3472B, December 11,1975, defines such a territory this way:

A nuclear weapons free zone, as a general rule, is deemed to be any zone, recognized as such by the General Assembly of the United Nations, which any group of States, in the free exercise of their sovereignty, has established by virtue of a treaty or convention whereby; a) The statute of total absence of nuclear weapons to which the zone shall be subject, including the procedure for the delimitation of the zone is defined: b) An international system of verification and control is established to guarantee compliance with the obligations deriving from that status.

The basic character of these zones was a fundamental global principle: *nonproliferation through non-deployment.* Non-nuclear zones are a broader concept than nonproliferation alone. I think that the very fact that it was possible to turn a great part of the planet into a zone free of nuclear arms is evidence of the po-

tential for further collective efforts on the path of total disarmament. Success has instilled hope that future joint efforts will turn the planet Earth into a territory completely free of arms of mass destruction. In many ways it is because of the peace-loving efforts of countries in creating and supporting non-nuclear zones that throughout the Southern Hemisphere there are no nuclear weapons there today.

Nevertheless, international state relations have shown that the prescription for non-nuclear geographical zones is not the optimal means for solving the problem of the spread of nuclear weapons. Most non-nuclear zones were not created in geographic areas where the nuclear powers maintained strategic interests or political influence, or in states that might develop their own nuclear arms programs. The concept of the non-nuclear zone has lost its global significance as a universal panacea against the presence of nuclear arms. It is impossible to expand the non-nuclear space to regions where the greater part of the planet's population is concentrated. What was possible in the Southern Hemisphere is impossible in the North; in fact, the paradigm of nonproliferation evolved opportunistically as different regions grappled with the issues at different times. The paradigm stopped working when it was implemented in regions where states with completely different approaches to disarmament and nonproliferation had direct conflicts of interest – conflict regions with stormy clashes over vital and strategic interests of states that belong to the "nuclear club".

In Antarctica, which inarguably is an important resource and energy base for the future development of humanity, the non-nuclear status of an entire continent is a major contribution to the process of universal disarmament and nonproliferation. But at the same time, because of its remote geographical position and low geopolitical significance, the continent was not of primary interest to the major nuclear powers. There were no sub-

stantive obstacles defining a territory of penguins as a nuclear free zone. You might say that the preventive denuclearization of the South Pole (and other regions) was relatively easy.

By contrast, in those regions where nuclear arms were already present, the concept of non-nuclear zones met with serious objections and limitations.

The primary reason the agreements based on the creation of extended non-nuclear territories are relatively ineffective is that they do not embody the fundamental quality of universality, that is, they cannot be extended throughout all the geographic points on the planet. The absence of universality makes it possible to believe that all the agreements on free zones, especially in today's world, cannot become the linchpin for global nuclear security. No single concept of global or regional security can be effective and self-sufficient if it is not fully universal. I am not talking about declarative or wished-for universality, but universality real and embodied in practice. A bad, but universal, security system is more reliable than a much better security system that lacks universality.

Nonproliferation Through a Test Ban

I chanced to read Joseph Brodsky's thoughts about the great teachers of humanity Mahatma Gandhi and Leo Tolstoy. He tried to look in a new way at their famous "nonviolent resistance to evil". The theory of nonviolence is based on the Biblical injunction: "Whosoever shall smite thee on thy right cheek, turn to him the other also". But, Brodsky continues, the phrase is taken out of context and takes on the meaning of a natural pacifism based on never using force under any circumstances, even in self-defense. The full phrase in the New Testament goes something like: "If you are struck on the right cheek, turn the other cheek. If some-

one makes you go a mile, go with him two miles. If someone takes off your shirt, give him your trousers, too". According to Brodsky, the theory of nonviolence is built on a wrong supposition because the meaning of the full text is completely different.

In giving this example, Brodsky expressed the thought that the way to disarm your enemy is in paying him back double. Go the extra mile and he'll give in himself. It doesn't matter what the path is, peaceful or armed.

I bring this up to show the linchpin of the mad arms race in atomic weapons: if you are being drawn into nuclear competition, don't try to weasel out of it, take part. But don't go one mile, go two. Reply with even more arms! Only in that way will you be able to force your enemy to give up his original intentions forever. Don't allow yourself to be struck, but strike twice. The enemy, originally planning to go one mile, will have to go two. And he'll run out of steam somewhere along the way. And it can be achieved only through incredible, almost inhuman, efforts, through suffering and extraordinary exertion.

That was the apologia for the nuclear arms race between the two giants of the last century: forcing each other to go that mile and forcing each other to go even more than they expected, to see who would give up first.

From the moment the first American bomb was tested in Death Valley to the present time, the planet earth has patiently put up with 2,053 nuclear explosions.

The record belongs to the Americans. At the Nevada test site, on Bikini atoll, in Alaska (three explosions), in New Mexico (three explosions), in Mississippi (two explosions), and in Colorado (two explosions); they set off 1,030 atom and hydrogen bombs. In the Soviet Union, at the Semipalatinsk test site, on the island of Novaya Zemlya, in Ukraine (two explosions), Uzbekistan (two explosions), and Turkmenistan (one explosion); there were 716 explosions. In French Algeria, on the atolls of Mururoa

and Fangataufa and Christmas Island (30 explosions) and other Polynesian islands, there were 210 explosions. The test site on Lake Lobnor, 45 explosions. And then Great Britain, in agreement with Canberra and Washington, exploded on the territory of Australia (12 explosions) and in Nevada 44 nuclear and thermonuclear charges.

And then there is the third nuclear world: Pokharan in India, six (including 1974), and Chagai Hills in Pakistan, seven nuclear explosions.

Despite the vigilance of military strategists and tacticians, who wanted to add at least one more total destruction to the altar of already assured multiple destruction, they all realized that they had long crossed the line beyond which there are no winners and no losers.

Further modernization of nuclear arms is not only not justified from the military point of view, it simply defies logical explanation "What can be done with fewer assumptions is done in vain with more", English philosopher William of Occam once said. There was not only no reasonable necessity, but no simple usefulness in hypothetically being able to destroy one another 1,001 times! Occam's Razor should have been brought into action much earlier.

In 1963, a year after the nuclear Armageddon almost occurred, the leaders of the United States, U.S.S.R., and Great Britain met in Moscow, recognizing the pointlessness of waving around a nuclear club, and signed the Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water. In time, more than 120 countries joined the treaty. Dialogue, this time only between the United States and the U.S.S.R., continued in 1974 with the signing of a treaty on the elimination of underground nuclear weapon tests. The yield of underground explosions was limited to 150 kilotons and the number of tests was reduced.

Two years later a treaty was signed that I considered rather hypocritical – because it directly affected our country as a "peaceful" nuclear test site of the Soviet Union.

The bilateral American-Soviet agreement dealt with the opportunity to use nuclear charges for civilian peaceful purposes. What are peaceful purposes? Let us list them: constructing dams, creating underground storage for gas, and breaking up cliffs or breaking them down even further. The basic hypocritical point of the treaty is that nuclear explosions could now be done not only at a test site but anywhere at all, even in a suburban lake.

It's hard to imagine where the attempt to tame the atomic beast would have led. Peaceful explosions did take place. On the territory of the Soviet Union, in many different spots, there were around 120 "peaceful" explosions. They might have tried "to create" the famous dam in the Medeo boundary by a directed nuclear explosion.

People understood the inefficiency of these treaties. Despite the declared ban, the signed and ratified treaties did not stipulate a process of observation over the nuclear tests. The lack of control meant that if a state could get around the technical barriers and keep the tests from being verified, it could continue nuclear testing – at least until those tests were detected by monitoring and verification systems. Satellite systems and sensitive equipment could register the characteristic underground tremors or atmospheric manifestations, but there was no special service to monitor testing within the framework of these treaties.

In January 1994, as part of the Geneva conference on disarmament, a committee was formed to develop the text for a future universal treaty on the nuclear test ban. Two years later, on September 24, 1996, the Treaty on a Comprehensive Ban on Nuclear Testing was signed. A few days before that epochal event, the General Assembly of the United Nations confirmed

the final text of the test ban. The basic aim of the treaty is expressed in Article 1:

Each State Party undertakes not to carry out any nuclear weapon test explosion or any other nuclear explosion, and to prohibit and prevent any such nuclear explosion at any place under its jurisdiction or control.

Article 2. "Each State Party undertakes, furthermore, to refrain from causing, encouraging, or in any way participating in the carrying out of any nuclear weapon test explosion or any other nuclear explosion.

The first state to sign the treaty was the United States. The first nuclear powers to ratify the treaty were France and Great Britain. Today 149 countries have signed the Comprehensive Test Ban Treaty including the Big Five – the United States, Russia, China, France, and Great Britain. However, the successful realization of the treaty has met with problems concerning its ratification by all the states that signed it.

Nevertheless, the Comprehensive Test Ban Treaty is one of the few documents that reflect the interests not of a single state but of all of humanity. The regimen of nonproliferation through a ban on testing has improved the health of the international situation and brought an enormous contribution to the system of safeguarding global and regional security.

This treaty is particularly important for us in Kazakhstan, because the world's second-largest test site was located on our territory, and not far from our borders was another large nuclear test site.

I still believe, however, that the ban on testing in its present form does not eliminate the problem of future improvements in nuclear weapons and the contamination of the environment. A ban in a treaty even more complete than this one would not deal with the root of this evil – the test sites for testing nuclear weapons.

Despite the comprehensive ban, the test sites have the capability of being returned to active service, and that leaves the probability that a country will independently drop the non-test regimen from consideration of its own needs or interests. That happened in 1996, for example, when France unilaterally resumed testing, even though the other nuclear powers had ceased atomic testing. This caused a bit of an outcry throughout the world. Explosions resounded on the Mururoa atoll: The French army tested nuclear warheads for a new ballistic missile for the Triomphant submarine and was collecting data for a computer simulation program.

The French example is proof of the ineffectiveness of all acting treaties on banning nuclear weapons. So it would be wise to pay more attention not only to the ban of nuclear weapons but also to closing down nuclear test sites.

This precedent was set by Kazakhstan when we shut down the Semipalatinsk Nuclear Test Site and by doing so removed the very possibility of testing. The official closure of all test sites through mutual agreements would evince the sincerity and reality of the intentions of nuclear powers to cease all testing of nuclear bombs without any threshold limitations.

Nonproliferation Through Nonpossession...

The human community continues its search for new ways and means to substantially weaken the centrifugal force of nuclear weapons. We need new political tools that would take more strongly into account the need for a universal approach to nonproliferation and disarmament – and not only take the idea into account but actually put universality into action.

That there must be a new mechanism for safeguarding the regimen of nonproliferation as the basic guarantee of international security that would apply to all states without exception.

We don't need a scattered "shooting into crowds", but an individual approach to each state. Today it would be unrealistic to make an entire continent or region non-nuclear where there already are nuclear and non-nuclear states. The question can be solved only gradually, country by country, bearing in mind the existence of those nuclear states that have reasons for feeling they cannot give up their nuclear status.

We must try to establish a principle of compromise universality. Nuclear arms have already proliferated: we all accept that as a given. But we must unanimously and unconditionally agree that nuclear arms should not proliferate any further. And we, unanimously basing ourselves only on good will, agree to delimit the already existing nuclear borders and undertake collective efforts to protect them from violation. In the future, the borders must inexorably shrink until nuclear arms vanish forever.

The principle of nonproliferation through nonpossession has three basic tenets: nonproliferation through nonpossession, nonproliferation through nondeployment, and nonproliferation through a test ban. The idea of uniting, or universalizing, all the principles of nonproliferation is the basic task for today. Only after this task is solved effectively can humanity sigh in relief and take down the warning sign from its future historical path: "Danger! Nuclear Weapons!"

In the era of global bipolar confrontation, the most highly perfected embodiment of the principle of compromise universality was the Treaty on the Nonproliferation of Nuclear Weapons signed in Geneva on July 1, 1968 by the leaders of the three largest nuclear powers and several non-nuclear countries. By 1970, around 40 countries had signed and ratified the treaty. It went into force on March 5, 1970. By 1995 there were 175 participant states in the treaty, including nuclear states "that had produced and exploded nuclear weapons or other nuclear explosive devices before 1 January 1967", according to the treaty.

Besides the United States and the U.S.S.R., three other countries had detonated their first atom bombs by then: the United Kingdom of Great Britain and Northern Ireland, the People's Republic of China, and the French Republic.

France ran its first test on February 13, 1960. This was the successful conclusion to its national nuclear program begun because of France's crisis in the international arena – the Suez Crisis, the cooled relations with the United States, and the threats from the U.S.S.R.

In 1964, the area around Lake Lobnor was shaken by a powerful explosion. The People's Republic of China informed the world of its nuclear potential. I must say that in its nuclear program China displayed its practically unlimited intellectual and technical resources. Consider that first that the Soviet Union had stopped aiding Beijing in its development of the bomb after Stalin realized what it would mean for China's Great Helmsman to have nuclear weapons in his hands. Second, a large number of Chinese nuclear physicists had emigrated to the United States.

It's interesting that today, when we talk of the Security Council of the United Nations, which consists of nuclear powers, we could use "Big Seven" rather than "Big Five". As early as 1967, India and Israel had every (or almost every) technology to detonate a nuclear device. But for various reasons the tests did not take place.

In the end, the United States, U.S.S.R., China, Great Britain, and France formed the "Big Five" of the nonproliferation treaty. In turn, Great Britain, the U.S.S.R., and the United States, in accordance with the treaty's text, became depository countries. Each country that joined the treaty and signed it had to deposit its ratification instruments with the depository states. Kazakhstan, which in the early 1990s had the fourth largest nuclear arsenal in the world, joined the treaty as a state with no nuclear weapons after accepting the Memorandum on Security Safeguards proclaimed by the largest nuclear powers.

Procedures for joining and leaving the nonproliferation treaty were established and included signing the additional agreement with the International Atomic Energy Agency and placing our industrial or research sites working on atomic energy under the safeguards of IAEA. The IAEA naturally did not ban treaty members from using nuclear reactions for exclusively peaceful purposes or developing further progress in nuclear energy and fundamental research.

The principle of nonproliferation of nuclear weapons was observed and the interests of both nuclear and non-nuclear powers were served: Nuclear powers do not proliferate and non-nuclear countries do not accept nuclear weapons. This was a compromise solution expressed in the spirit of universality. However, a number of countries for a variety of reasons did not join, and this threatened the absolute universality of the treaty's effect.

There are no doubts that the nonproliferation treaty made an invaluable contribution to general disarmament and containment of the nuclear arms race. The last quarter of the twentieth century passed under the formula "nonpossession through nonproliferation".

Passage of the Nonproliferation Treaty in the fate 1960s significantly slowed down the process of general nuclearization in many developed and developing countries. Experts had estimated that 20 to 30 years after the first atom bomb was tested in Alamogordo, no fewer that 20 countries on all inhabited continents would have nuclear weapons. But their predictions did not come true.

Thanks to the authority of the Nonproliferation Treaty, many countries cut back or even ended their nuclear programs. The atmosphere of nonproliferation became so influential that nuclear ambitions were considered poor taste in international relations, and some countries toned down demonstrations of their ability to have nuclear weapons. The Republic of South

Africa, which has a nuclear stockpile, did, in the end, proclaim itself non-nuclear and joined the nonproliferation treaty. Many threshold countries ware forced to give up further development of nuclear arms.

The global regimen of nonproliferation improved the political weather worldwide. The former republics of the Soviet Union, now sovereign and independent, started programs of complete disarmament of their nuclear potentials. Kazakhstan, in particular, even before the collapse of the U.S.S.R., unilaterally shut down one of the largest atomic test sites of the world – Semipalatinsk – and after independence made the decision to get rid of its nuclear arsenal as well.

THE PERMANENT TREATY: A RETROSPECTIVE ASSESSMENT

On April 17, 1995, a conference of the member states of the Treaty on the Nonproliferation of Nuclear Weapons opened in the General Assembly building of the United Nations in New York. A total of 171 government delegations from 179 member states participated, including the Republic of Kazakhstan. We considered this an extremely important event as Kazakhstan's rejection of nuclear weapons was to a certain degree dictated by the existence of the nonproliferation treaty. Thanks to the treaty, the number of members of the nuclear club had not increased greatly and did not lead to the use of atomic weapons in military conflicts. In many cases, the nonproliferation treaty served as a powerful deterrent, blocking open testing of nuclear arms by countries on the threshold of nuclear potential. This held even for countries that had not signed the treaty and were not members.

Before the start of the conference, the United Nations Security Council passed Resolution No. 984 concerning the so-called

negative and positive safeguards for states without nuclear weapons. According to the "negative" safeguards, the nuclear states pledged not to use nuclear weapons against non-nuclear states under any circumstances. The "positive" safeguards included a commitment to defend non-nuclear states against threats or actual use of nuclear weapons. The big five nuclear powers pledged not to have aggressive nuclear policies or allow anyone else to express aggressive intentions; to try to isolate nuclear weapons; and to promote nuclear self-disarmament and disarmament.

On the eve of the conference, the key stewards of the world's nuclear arsenals included new measures to hasten nonproliferation and disarmament previously missing from the original treaty text.

The basic and vitally important question was point 19 on the agenda: the issue of extending the duration of the treaty. As members of the kazakh delegation later told me, it was this issue, of all those on the agenda, that caused all the debates and discussions. Somehow, the final examination of prolonging the treaty was left to the last days of the conference. A number of developed and unaligned countries proposed a resolution calling for urgently establishing a regimen of universal disarmament with precise deadlines for the verifiable reduction of all nuclear weapons in the world. They demanded a step-by-step schedule for the complete cessation of the production of atom and hydrogen bombs and the destruction of the entire arsenal of nuclear weapons and nuclear materials, including weapons-grade highly enriched uranium. This revolutionary initiative from a group of countries naturally met resistance from the nuclear powers. As a counter argument they offered the conclusion that for all their desires to be rid of their stockpiles of nuclear weapons, it was impossible for purely technical and financial reasons. Similarly, they argued, the destruction of all nuclear weapons all at once

would entail enormous costs and an ecological danger. The nuclear powers let it be known in this way that while they had mastered how to create and modify weapons of mass destruction, they were far from perfect in the technology of their destruction and the use of highly radioactive components.

One of the delegates to the conference addressed this issue:

The developed states, including nuclear states, in some sense behaved much more honestly than the radicals from the nonalignment movement. It is obvious that it is much easier to demand that someone else destroy nuclear weapons – all of them, all at once. For a number of nonaligned countries that call is nothing more than political rhetoric. It is true that Malaysia has no direct or even potential nuclear threats; nor does Malaysia have the financial, technical, or intellectual abilities to create such weapons.

This diatribe put a number of non-nuclear countries in their place. Implicit in this lecturing was a clear message: that the fate of nuclear weapons can only be decided by the countries that have the bomb. But this begs the question: Why is the presence of non-nuclear countries needed at all at forums and conferences and why are they parties to treaties and agreements? – particularly since winning votes are determined by a democratic majority? The countries without nuclear weapons participate in the process of disarmament not just so that they themselves won't have nuclear weapons but also so that others won't have them.

Nuclear weapons represent the greatest danger to non-nuclear countries. This is so partly because they are virtually defenseless when it comes to nuclear issues. Nuclear countries by contrast share a fear-driven common fate of mutual deterrence. Put in a broader economic context, countries do not have nuclear weapons merely because they can afford them. The pursuit of nuclear technology becomes a badge of technological modernization. History shows that if a country's level of technological

prowess is high enough, its leaders instinctively strive to join the nuclear club. This reasoning is obviously absurd but this pattern repeats itself again and again. I am certain that there can be no "alibi" for developing nuclear weapons in the name of development. For two weeks delegates from over 100 nuclear and non-nuclear countries reviewed the history of the Nonproliferation Treaty and its work, evaluated it, and thought about its future. On May 1 and 2, 1995, the conference reached its climax with members voting on "indefinite" or temporary extension of the treaty. In the course of the stormy discussions and plenary meetings, it was not clear what the result would be.

A key element of the debate concerned the effectiveness of implementation, and whether verifiable enforcement of the treaty was possible. Those who were for unlimited extension felt that it would strengthen general security. The United States and Russia were firmly convinced of the necessity for "unconditional and indefinite extension" of the nonproliferation treaty. They also took on the responsibility of observing even more strictly the founding principles of the treaty and increasing the effectiveness of mutual negotiations on nuclear disarmament. The Chinese delegation also supported the idea of "unconditional and indefinite extension", without rejecting other reasonable variants.

This did not mean that only the nuclear powers and large states spoke up openly for "permanent" extension of the treaty. Those who proposed limitations on extension pointed out that an "indefinite and unconditional extension" of the nonproliferation treaty would put the nuclear states in a privileged position. A permanent treaty would allow them to get by without excessive zeal in disarmament and to slow down the negotiation processes about universal and global disarmament of the largest nuclear powers. Nuclear status, in that case, would be a constant diplomatic weapon in international processes, which would significantly weaken the peace-making efforts of the non-nuclear countries.

Some arguments boiled down to accusations that the nuclear powers continued to exchange nuclear technology among themselves and transfer the same to their strategic allies. In particular, the delegations of Syria, Egypt, and Jordan – out of considerations of regional security – refused to support the idea of indefiniteness for the treaty until Israel officially joined the nonproliferation treaty and entered the system of IAEA safeguards.

Some delegates warned that the "indefinite" treaty would cause a general and permanent schism into two camps: the nuclear and the non-nuclear worlds. The proponents of limited extension proposed tying the duration of extension to actual processes in nuclear disarmament, and that new extension would be made as disarmament milestones were achieved. This was the proposal made by the Mexican delegation. Failure to meet milestones, and the discreditation it implied, would force the nuclear powers to act on constructive peace-making efforts to reduce nuclear arms.

The great majority of delegations from the members of the Nonalignment Movement and some of the delegations of the developing nations made a mandatory condition for "indefinite and unconditional extension". These conditions included conclusion of negotiations on the Comprehensive Ban on Nuclear Testing in 1996, the start of negotiations on nuclear disarmament with the participation of all five nuclear powers, and the start of negotiations on the Treaty Banning Production of Fissionable Materials and strict international controls over existing stockpiles of these materials.

A group of Bandung countries, including Iran, Iraq, Indonesia, and Malaysia, proposed a variant which extended the nonproliferation treaty for 25 years with an automatic 25-year extension. The more radical delegates from several developing nations felt that the process was not moving properly and that, in fact, the Big Five had not moved at all toward total destruction of the monstrous weapons.

In accordance with the rules of order, the president of the Conference on the Treaty on Nonproliferation of Nuclear Weapons, Ambassador Jayantha Dhanapala of Sri Lanka to the United States, received three draft resolutions on extension: Canada's "on indefinite and unconditional extension", Indonesia's on "multiple extensions for 250-year terms", and Mexico's on "conditionally indefinite extension".

Finally, on May 6, 1995, during the plenary session 108 member states of the nonproliferation treaty signed a draft resolution extending the Treaty on the Nonproliferation of Nuclear Weapons (NPT) for an indefinite period, expressed in the Canadian delegation's brief formula: "The treaty must remain in force indefinitely". The decision to choose the "unconditional and indefinite extension" of the nonproliferation treaty entrenched the system of nuclear global and regional security already in place at that moment.

But that decision sounded like an indisputable recognition that this security system was satisfactory and sufficient, totally responsive to the reality of the times and not in need of any constructive review, as if the world situation had changed very little from the treaty's inception in 1968. But does a 25-year-old concept of nuclear security reflect contemporary reality and the changes in the scheme of international contradictions and confrontations? Does it adequately reflect the global geopolitical transformation that took place in the last decade of the twentieth century? Is the idea of treaty permanence so important in view of the swiftly changing geostrategic map of the world? Did the nuclear "power factor" need to be eternally codified on the eve of a new millennium?

Every collective action leads to change and a new reality arises as the result of important joint decisions. I believe that the indefinite and unconditional extension of the treaty served as a factor in the subsequent legalization of the "nuclear third world".

It codified the formation of a new reality – the multipolar polynuclear world.

The decision affected the entire course of development of nuclear relations in the world. How did this influence make itself felt? How great was it and what did it cause?

First of all, let us look at the text of the nonproliferation treaty itself and try to understand what has been extended forever and which issues deserved "unconditional and indefinite extension". The main goal of the treaty was expressed by the fundamental Articles 1 and 2 of the text. According to Article 1, which establishes the obligations of the nuclear powers in accordance with their noble desire for peace and disarmament, "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".

The countries without nuclear weapons that signed and ratified the treaty undertake, according to Article 2, "not to receive the transfer from and 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".

These articles have many more nuances than might appear at first sight. If a state has nuclear weapons and wishes to locate them in a third state, it must develop an appropriate agreement with that government in accordance with international procedures. Since the receiving side is an independent state, the sides

must define the terms of placement in order to avoid violating the norms of sovereignty. All transfers require sanctions for that specific action and that permission can be formulated only as the acceptance of those weapons. In the case of nuclear weapons, "placement" in another location is totally analogous to "transfer" of nuclear weapons, and is nominally in violation of the treaty. No matter the circumstances, formal placement of nuclear arms in a third territory is absolutely tantamount to "transfer".

More importantly perhaps, while both parties recognize that the placement of nuclear weapons brings concomitant danger, the parties agree that the transferred nuclear weapons cannot be used without the agreement of the original owner. That is, permission to use atomic weapons is tantamount to indirect control of those weapons by the transferor. This precedent introduced the principle of collective management or control of the weapons, a novel development in the nuclear era.

Is the presence of nuclear weapons in one state an "indirect" inducement for other countries to acquire them? Absolutely yes! Possession of nuclear weapons leads to the inevitable process of increasing the number of its possessors. All these forms are identical to the concept of indirect control.

Another critical point concerns Article 6 of the treaty:

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 is the same concept to which some nonaligned states had objected before the final ratification of the treaty a quarter of a century earlier. What "successes" in this area can be demonstrated in this time? The number of strategic nuclear warheads in the U.S.S.R. and the United States doubled, totaling almost 17,000, as compared with 7,500 in 1970! Hardly the goal!

The strategic nuclear stockpiles increased by two or three times among other nuclear powers as well. Meanwhile, the number of tests, an index of the modernization of the arms race, had also grown throughout the world and the delivery systems were also significantly improved.

Even with the best intentions and kindest interpretation, qualifying this situation as "good faith for a general and complete disarmament" can only be made with tongue planted firmly in cheek. At least we can be glad that the multiple increases in the power of atomic weapons has led to a greater mutual love of peace among the major nuclear powers and is prompting them to an ever greater desire to negotiation about peace and friendship!

The very basis of Article 6 is weak. It does not refer to the process of disarmament but only about negotiations on disarmament. The leaders of nuclear powers are required to carry on negotiations about disarmament over a cup of coffee and with great delight. "Not a bad idea! Why not?" But they're not required to disarm!

In the context of the imperfections of the treaty itself, the decision to prolong it indefinitely and unconditionally demonstrated that the nuclear countries are required to negotiate about disarmament "permanently". In this sense, they will never be able to disarm; the nuclear countries are required "permanently" not to induce others to want nuclear weapons and yet just by owning nuclear weapons always will be inducing the entire world to nuclear arming. The nuclear countries will "permanently" not transfer atomic weapons and will permanently place them wherever they can. This appears to be sheer sophistry, and in this sophistry is a dead end on the path toward a real and unconditional total disarmament.

I am opposed to legal recognition as nuclear states of those countries that manufactured and tested the atom bomb before 1967 within the framework of the nonproliferation treaty.

As it stands, those who revealed their tendency toward nuclear madness in the early days of the nuclear era receive a vote of confidence for their "unconditional and indefinite" possession of nuclear weapons. At the same time, those countries that pursued policies of peace – who might have developed the atom bomb but chose not to – become classified under the umbrella of established nuclear powers. To me this is simply not right.

If we keep to the general usage of such terms as "nuclear madness" or "mad arms race", then we see that the treaty is founded on a contradictory image: It's not the doctor treating the patient, but the patient treating the doctor. Global disarmament will only be realized when the entire international community, not just the nuclear club, join in common principles of democracy and collegiality to end the global arms race once and for all. It has become the norm for countries without arms to act as extras in the drama of disarmament and nonproliferation without the power of a deciding vote. This is not right. If the nuclear states include the rest of the non-nuclear world as integral to all treaties and agreements which they themselves initiate, then they must take the next step – to create genuine parity and establish the principle of equality of votes in this process.

As long as the rules of the game in nonproliferation, nondeployment, and disarmament are determined by the countries with nuclear weapons, we are unlikely to see a positive ending to the process of total nuclear disarmament. The danger is that any state that acquires nuclear arms begins to think that its vote will now count the same as the votes of all the non-nuclear states.

The non-nuclear states cannot complain about this blatant undemocratic practice as nuclear weapons are a proof of a false thesis. Nuclear weapons create disequilibrium in relations among states rather than foster balance. They devalue democratic principles in international relations because nuclear weapons by their "political structure" are undemocratic and totalitarian. Con-

sequently, all existing treaties based and acting on nuclear arguments, even those directed at peace-making efforts, inevitably reveal their discriminatory imbalances and flaws.

The compromise inherent in the treaty leads us to see that the nuclear powers have put all their efforts into banning *horizontal* proliferation (the creation of new nuclear possessors) while not restricting themselves to *vertical* proliferation (increasing the potential of their own nuclear weapons). This problem is exacerbated by the treaty and does not deal specifically with the concepts of horizontal and vertical proliferation.

Limiting the spread of nuclear arms – including their redeployment even to potential and actual allies – is an intrinsic step toward the ultimate demise of nuclear arsenals. The gradual accumulation of nuclear weapons leads to imbalanced concentration of weapons. Let me give another example: the weakness of the nonproliferation treaty lies in the definition of the very concept of nonproliferation. At the starting line of a grotesque race are 100 amateur runners and five professionals. The start signal is given. The professionals run off, while the amateurs remain in place. Why? Because those are the rules! The five runners disappear into the distance without interruption or losing speed. The 100 amateurs remain standing still, cursing each other, the referees and the rules of this extraordinary run.

How long will the countries tolerate a situation in which they do not have the right to possess nuclear weapons, while others, who already have weapons, secure the right to have as many as they want? Sooner or later the weight of this discrimination will overwhelm the established proliferation policy regime.

From the point of view of the glaring imperfection of the treaty itself, and from the point of view of further developments and changes in the nuclear balance in the world arena, the decision on the "indefinite and unconditional extension" of the Treaty on the Nonproliferation of Nuclear Weapons did not

respond to the interests of global and international security and the new geopolitical reality. What did the decision on the "permanence" of the nonproliferation treaty mean in the new, multipolar world? And what did the conference of 1995 fail to do, by paying attention to fixing the regime of proliferation instead of strengthening it?

The conclusions speak for themselves:

- Nuclear states do not intend to give up possession of nuclear weapons or move toward their destruction;
- Nuclear states intend to use atomic weapons as inappropriate leverage in international diplomacy;
- Nuclear states do not intend to give any precise and clear safeguards of national security to non-nuclear states;
- Nuclear states have not initiated any concrete measures to develop policies toward "threshold" countries in the nonalignment movement that did not sign the nonproliferation treaty;
- Nuclear states show blatant discrimination toward nations that are conscientious treaty members and non-nuclear states. They are left on their own in the face of possible nuclear threat from potential new regional nuclear powers;
- Nuclear states intend to exclude non-nuclear states from the negotiation process, turning them into observers without any guarantees of a constructive and successful end to the negotiations; and
- Non-nuclear countries are asked "not to interfere" in the coming redistribution of the world based on nuclear argumentation and the process of nuclear re-arming on a higher level of quality.

The decision of the New York Conference on the Treaty on the Nonproliferation of Nuclear Weapons effectively solved only one task: it revived life back into an obsolete 30-year-old scheme for nuclear security. The new century got a recommendation to safeguard its security using the last century's recipes. As for the

truly important issues of safeguarding nuclear security, the time since the conference has shown they are all but forgotten.

The promise of universality inherent in the nonproliferation treaty has still not been achieved. In fact, the indefinite term of the treaty has made it impossible for the process of disarmament and nonproliferation to ever be universal. There have, however, been numerous positive steps forward. After 1995 the treaty was joined by Angola, Brazil, Vanuatu, Djibouti, Oman, and the United Arab Emirates. Today only four countries have not signed the Treaty on the Nonproliferation of Nuclear Weapons: Cuba, India, Israel, and Pakistan. (After Nikita Khrushchev's failed attempt to deploy 42 medium-range ballistic missiles with nuclear warheads in Cuba, the issue of Cuba's nuclear or non-nuclear status is no longer an issue.)

Before 1995, most of the world knew that Tel Aviv, Delhi, and Islamabad had nuclear weapons, or at least the necessary components to manufacture them. So talk about the needed universality of the nonproliferation regime is only specifically about them. We could say that universality is almost achieved, since the number of member states in the nonproliferation treaty today is 189, and only four countries are not members. Simply put, five nuclear countries are members of the nonproliferation treaty and three nuclear countries are not. Is there any point in talking about true universality? In fact the regime of nonproliferation has failed utterly, since one half, consisting of five nuclear countries, cannot proliferate nuclear weapons, and the other half, three nuclear countries, can proliferate nuclear weapons freely.

All the nuclear powers are unlimited only in vertical proliferation and all are limited in horizontal proliferation. The nuclear states of the nonproliferation treaty cannot proliferate nuclear weapons as part of the treaty terms; the nuclear states of the nonalignment movement cannot participate in the process be-

cause the non-nuclear states cannot receive nuclear weapons as a condition of their being members of the nonproliferation treaty. Even after the last 30 years the simple principle of universality – the main task of the nonproliferation treaty – has not been achieved. The reality is just the reverse, and instead of universality we achieved parity, one half of the nuclear states participate in the nonproliferation regime, and the other half of the nuclear states does not.

Nonproliferation is also not a crowning achievement of the treaty. Nuclear weapons have been and are being proliferated indirectly at an alarming rate throughout the world. Traces of nuclear weapons are found all over the world, and their proliferation, expressed in the form of *additional* possession and desire for possession, has reached a threatening level. Almost 40 states have the potential ability to own nuclear weapons. In the last quarter century, nearly 10 countries have joined the nuclear club by constructing a bomb or engaging in active research with the objective of creating nuclear weapons. Instead of five countries with nuclear weapons, today we have at least eight with a definite nuclear arsenal. And there are four other countries whose non-nuclear status must be regarded with suspicion.

Disarmament is probably the most painful topic in a discussion of the results of the 30 years of the Treaty on the Nonproliferation of Nuclear Weapons. The original lapse in defining the proliferation of nuclear weapons, accidental or intentional, caused the process of disarmament not to take place. There was a limitation only on the process of nuclear arming. I am not indulging in word play: There is no reason to doubt that in spirit and in essence the process of disarmament and the process of limiting arming are totally different, albeit connected, concepts. The number of nuclear warheads increased greatly, and only now, after bilateral agreements, is it returning to the starting level of 1970. Put starkly, during the course of an entire genera-

tion, and the entire lifetime of the nonproliferation treaty, the world has not disarmed.

The picture describing the evolution of nuclear weapons and the appearance and functioning of the nonproliferation treaty looks something like this: In two geographical spots on the globe, scientists created a new serum – nuclear bacilli. A strong antibiotic, the nuclear serum was first intended to fight the "brown plague". The plague vanished, but the nuclear bacilli remained. They were retargeted at the "communist fever" and the "imperialist epidemic". Gradually, the bacilli multiplied and their colonies grew. Artificial selection led to new mutations and much more dangerous nuclear bacteria. The lack of artificial barriers to further diffusion of the bacteria led to the danger of a worldwide atomic pandemic.

Frightened and indignant neighbors demanded an end to the "outrage" and the destruction of the nuclear bacteria. Consensus was reached. The pioneers in nuclear bacilli pledged not to take them out of the laboratory, not to sell or give them to people who liked extreme sensations. They agreed not to sell them on the Internet. And they pledged to eventually destroy them. Peaceful inhabitants gladly agreed not to buy or accept them as gifts. But shelves and cupboards have limits, and the labs could no longer hold all the petri dishes with the nuclear bacilli. It was dangerous to move around in the cramped quarters; there was the chance of knocking over the dishes and test tubes.

They found a way out of the situation. The originators of the nuclear bacilli started asking neighbors and friends to hold the test tubes for a while. They explained the benefit – people would be afraid of contagion and would not dare break into your house, so you'll feel better. After a while, we'll come back for them. Time passed. The dishes were still full of nuclear bacilli, the nuclear colonies were partially at the neighbors' houses, and the people nearby were still worried about the possible danger.

They had another meeting with the same questions: "Well, when? We agreed that you would destroy the nuclear bacteria. You could have solved the question of how to get rid of it a long time ago. It's been 20 years that you've been here. And we still don't see a way out. When?"

And a firm and direct answer is heard: "Never".

Admission of imperfection is a step toward improvement. Further improvement of the general regime of global and regional security will be impossible if its present deep flaws are merely stated and ignored. It is dangerous to see only what the nonproliferation treaty has accomplished as a mechanism of nuclear security without also seeing what it has not done. For the cause of general and unconditional peace, what the nonproliferation treaty did not or could not do is much more important than what it did or could do. The dangers stemming from the omissions of the Treaty are greater than the potential dangers it prevented.

A NEW LEVEL OF CONFRONTATION

No one knows how or why human beings have an innate desire to create weapons for the greater destruction of each other. But it still seems that the long era of creating and perfecting weapons has to end. And it's quite possible that it will be soon, perhaps even in this new century. The evolution of weapons can be compared to the work of Japanese craftsmen: When creating exquisite and unique objects, Japanese masters invent special tools for making them. When the tools have served their function in making the unique objects, the craftsmen throw them away. Perhaps the weapons of individual and mass killing are those disposable tools which were necessary at one stage in time but which in peacetime are useless?

Sometimes to create a good and sharp sickle, you have to go through the stage of a three-sided bayonet of carbon steel.

Maybe the stage of nuclear weapons was necessary for humanity to truly understand that they need to be reborn in more humane and productive forms for the good of humanity. Time will tell when we will follow the example of the Japanese master craftsmen and throw away nuclear weapons, treating them as a transitional stage for the manufacture of much more peaceful objects.

I noted long ago that the assessment of many works that theoretically determine the very status of nuclear weapons shows they are no longer viewed as weapons per se, to be used or to solve conflicts. They are systematically endowed with the symbolism of power that carries a sole functional freight: reinforcing the political clout of the nuclear club. Besides the tragic "demonstration" and first use of nuclear weapons in 1945 in Hiroshima and Nagasaki, we see that they have not been used a single time in the last half century in military conflicts or political confrontations.

Nothing is more dangerous than belief in a truth that, with time, has stopped being true. It is true that the world had been on the brink of nuclear war many times. In the era of the bipolar world, nuclear weapons did not function as weapons in the ordinary meaning of the word. They justified their functional definition as "cold" weapons in a Cold War. But we must not forget that throughout those years, it was only one step and a few minutes that separated atomic weapons from being symbols or real weapons. Those near incidents in the last decades must always serve as a reminder that despite the symbolism, nuclear weapons are the most dangerous and deadly arms in human history. The fundamental "unsuitability" and deterrent factor of the weapons of mass destruction should not lull us into considering the presence of nuclear weapons as a boon to humanity. On the contrary, atomic weapons are evil. Until destroyed they may find a chance to show their true, satanic face.

After pondering the dynamic of development of nuclear weapons and the arms race during the bilateral confrontation, I think that there is every reason to re-examine seemingly indisputable truths about the former role of nuclear weapons and the deterrent role it used to play.

Just A Blink...

I would like to give you a few examples of what this deterring-threatening "good" could have turned into during the half century of global bipolar confrontation between NATO and the Warsaw Pact. They should remind us that it was sometimes pure accident and sheer luck that kept us from nuclear Armageddon and the errors of all kinds of "containment" theories.

The year was 1974. The Pentagon's early warning system through computer error showed a nuclear attack by the Soviet Union. Instantly, after urgent and operative preparation, B-52 strategic bombers with nuclear warheads on board took off to bomb objects in the territory of the U.S.S.R. They followed the shortest route between North America and their strategic targets across the North Pole. On our side, once the bombers were detected, 70 long-range TU-128 interceptors took off into the air and were ready to enter combat in minutes. Preparations were begun for a retaliatory strike on the United States. A few hours later it would have been impossible to stop the nuclear merry-go-round. The strategic objects for nuclear attack in Kazakhstan were Almaty, the capital, the cosmodrome Baikonur, and the missile bases around Sara-Shagan and Zhangiztobe. The world, unaware of what was happening, was on the brink of the greatest and most terrible tragedy in history. The military was frozen in expectation of a world catastrophe. But we were all saved by chance. The army computer operators finally saw the internal error in the warning system and sounded the retreat. The B-52

squadrons, almost across the North Pole, were ordered to return immediately to their bases.

September 26, 1983. This time the error was in the Soviet early warning system. It showed first one and then a whole series of Minuteman intercontinental solid-fuel ballistic missiles being launched from underground silos in the United States. The flight time of the Minuteman was 40 minutes, and the Soviets planned to strike back in that time at strategic targets in the United States. It should be noted here that if the Soviet ICBMs (including 104 SS-18s from Kazakhstan) had taken off, there was no way they could have been called back, unlike the American strategic bombers. Fortunately, the Central Command in the area of Serpukhovo, getting no confirmation of nuclear attack from ground or satellite networks, decided it was a false alarm caused by failure in the electronic equipment of the early warning system. Once again, the world was saved by catching a mistake just in time.

January 1995. Norway launched a research rocket. It was seen by early warning systems and by fatal mishap was interpreted as a ballistic missile with a nuclear warhead headed toward the Russian Federation. An unexpected nuclear attack! Once again the mechanism to prepare a retaliatory strike was set into motion, right up to using the "nuclear briefcase". However, after an analysis of the parameters of the rocket, the military came to the conclusion that it was not a military missile. Retreat was sounded, just minutes before the chain reaction of missile exchange would have become irreversible.

And there were so many more mistakes and extraordinary situations. I doubt that all these incidents, caused by the ambitions of politicians and generals and by electronic, technical, and human error, were made public. I'm sure that many of these incidents are hidden away under the classification "Top Secret" in the bowels of the Pentagon and Ministry of Defense of the

U.S.S.R. So I don't see the point in listing all the facts. It's enough to note this important and fundamental circumstance: in reality, the deterrent factor of bilateral confrontation in the atomic age was not the existence of nuclear weapons and their notorious hypothetical function, but in some degree the profound responsibility, common sense, and cool-headedness of individuals. It was thanks to the individuals who did not panic or break down at the most dramatic and responsible moments, leaving the course of events to play out as they would.

Not a Weapon, But A Means of Deterrence

Have nuclear weapons ever served as a deterrent in the bipolar world? How right were we in attributing the absence of full-scale nuclear wars to the deterrent effect of atomic weapons? To a certain degree certainly, nuclear weapons have offered elements of deterrence, and in some cases functioned that way. But this seeming truth is not absolute, and in fact was not dominant in that world which is now gone.

Let me propose a thesis: In the period of bipolar confrontation, the conflicting parties not only sometimes found themselves "on the brink of nuclear war", but were – in fact – in some cases *already in the state of nuclear war.*

This paradoxical thesis means that the world had not only stood on the brink of total catastrophe but had already taken part in a nuclear global conflict – in other words, formally, we have had "nuclear wars". Recall the time when United States strategic nuclear bombers were already halfway to their targets in the U.S.S.R. These virtual or nascent "nuclear wars" ended before their conclusive stage or final phase, that is, before the bombers or ICBMs reached their targets and were used in their primary function to destroy the targets.

For what reason did the final stage of an ongoing nuclear war never happen? The answer is simple: Because nuclear war

has a unique quality that keeps humanity from experiencing all the horrors and consequences of global nuclear catastrophe. That unique quality can be formulated like this: *in its starting phase*, nuclear war in the era of global bipolar confrontation had a *reversible* character. Imagine a war with the use of conventional weapons. A bullet shot from a rifle or a shell from cannon irreversibly reaches its goal. After the start of a war and military action, a bullet or shell is impossible to stop or to influence in order to change its original trajectory. In conventional war the determining and dominating factor in victory or defeat is not the palpable rifle and cannon, and the end of the trajectory of a bullet or shell does not mean the end of the war.

The singularity of a global nuclear war is that the main stage of the war happens with lightning speed and without unrolling the main forces, boiling down to a mutual exchange of nuclear strikes. At the same time, the means of destruction (delivery systems) in nuclear war can redefine their original functions. And it is this circumstance that determines that very important characteristic of atomic war: its reversibility, reversibility at the starting phase of a war. That is why nuclear wars did not make the transition into their final phases.

In that sense, we could say that nuclear wars were not simply hypothetical or potential possibilities but are faits accomplis. And in that case, the thesis that atomic weapons are exclusively a deterrent to the start of nuclear war loses its point. There is every reason to state that the fundamental factor in that era was another, more real trait of nuclear weapons.

It was not because the "deterrent" effect of nuclear weapons played the dominant role in preventing global catastrophe that a full-scale nuclear war with a final phase did not occur. That was determined totally by a completely different and exceptionally important and unique quality of nuclear war: its *reversibility*.

This quality of nuclear war is not universal. I made the stipulation that nuclear war was reversible during the era of global bipolar confrontation. The reversibility was aided by space-time characteristics and idiosyncrasies of global confrontation. What were they?

First, the conflicting parties were separated by great distances of thousands and tens of thousands of kilometers. The main bases for the strategic weapons were located in the Western and Eastern hemispheres. In order for a missile complex to fulfill its military task, it required quite a bit of time by today's standards, 30 to 40 minutes. For example, the Satan needed 28 to 32 minutes to cover the intercontinental distance of 11,000 kilometers. So there were many minutes between takeoff and descent. There was also a complex and developed early warning system which cross-checked confirmation of nuclear attack.

The preliminary signal on nuclear attack had to be reconfirmed in many ways, both from ground systems and satellites. The crosschecking warning systems could accurately determine the real danger level of nuclear attack during the flight time of the ICBMs and strategic bombers. Even in the case of technical, electronic, or human error that could plunge the world into nuclear war, there was the opportunity to correct before entering the final stage of conflict. This was due to the reversibility of the process.

This undoubtedly means that the reversibility of nuclear war is the exclusive prerogative and characteristic only of global bipolar confrontation. In the case of geographical closeness of the probable enemy or common borders, the theory of the function of nuclear weapons as a deterrent loses all meaning, because a local nuclear war is conventionally irreversible in the absence of global confrontation.

Nuclear weapons fulfilled their deterrent function when, and only when, their use depended directly on the political will

of the leaders of the nuclear state. This refers to threshold nuclear conflicts, the most famous of which are the Cuban crisis and the Berlin Wall. In these cases, strategic and tactical nuclear weapons were brought into full battle readiness. The bombers were already in the sky and the launcher covers were open. The world was trembling on the brink of nuclear war. Everything depended on the political will of the leaders. No coded order from the nuclear briefcase came. The concepts of threatening deterrence and assured mutual destruction showed their practical side. There were only two choices: to be reasonable or not.

But the system of servicing the nuclear complexes kept growing more complicated. The warning system was so perfected and, therefore, so much more complex, that in a way it stopped depending only on the political will of the holder of the "suitcase".

The desire to reduce the time between external nuclear strike and retaliatory measures through an integrated electronic scheme that connected the warning system with the rocket complexes led to the possibility of missiles being launched not by orders from humans, but by errors in the warning system. As a result, the absence of political will in this chain led to not a "threshold of war" but a "state of nuclear war".

In all cases of nuclear war, the final phase was averted because of the timely intervention of people with their ability to analyze the situation, their critical perception, and their profound sense of responsibility.

The causes of nuclear conflict can be either political decisions or inevitable errors in the electronic-technical part of the nuclear complex. In the former, the world stood "on the threshold" of nuclear war. In the latter, the world stood either on the threshold of nuclear war or was in the state of nuclear war.

From Global to Regional

What are the specific attributes of nuclear conflict on the regional level? The very concept and character of such a conflict is entirely different from global confrontation. First of all, in the local strategic confrontation of two adjacent states, the possible nuclear conflict will not be reversible.

The strategic weapons in a local conflict, unlike the globally strategic ICBMs, are short- and medium-range rockets with nuclear warheads. Their radius, 500 to 3,000 kilometers, is quite enough to solve all strategic and tactical issues of using weapons of mass destruction. At the same time, their flight time is much shorter than that of intercontinental ballistic missiles. They take two to five minutes, which is almost a tenth of the analogous indicator for ICBMs. That short time is absolutely not enough to execute the complex cycle of actions that makes conflict in global confrontation reversible. It is impossible to check the original signal of the start of nuclear aggression from the probable enemy.

It is impossible to start the entire complex of measures for cross-checking and verifying the nuclear attack. Moreover, the human factor in the analysis of the situation and in the final decision-making is completely gone. In other words, everything that is specific to global confrontation is missing.

Regional nuclear conflict loses *reversibility*. Possible nuclear conflict on the regional level is *irreversible*, and therefore, its full-scale scenario is much more possible.

The parties in a regional nuclear conflict may have the illusory and dangerous sense of possible victory based on the idea that the speed of the nuclear massed strike will not give the enemy time to retaliate. The short flight time of the missiles does in fact reduce the chance to launch a retaliatory strike.

To a lesser degree, this loss of reversibility is due to the circumstance of another feature of regional nuclear conflict –

the combination of power confrontation. Adjacent borders not only allow but also force both sides to get all forms of weapons into an escalating nuclear conflict – from atom bombs to conventional weapons. The short distance between military targets and the stationary and mobile launching pads make it possible to use a large pool of ballistic missiles with conventional warheads, as well as nuclear warheads. If the aggressor's strategic plan includes a sudden nuclear attack, if the countries share a border, there will also have to be a massive strike with ordinary short- and medium-range rockets on the air bases of the enemy in order to destroy them.

Massed and combined nuclear attack with a low probability of a retaliatory strike makes *preventive* strikes a priority. Because of the unlikelihood of retaliating, both sides reach the conclusion that they must strike preventively to avoid total destruction from the mass attacks of their probable enemy. The illusion of victory through preventive attack in the process of escalation of nuclear confrontation on the regional or local level significantly increases the probability of armed conflict with atomic weapons.

It is difficult to assess just how much greater the probability of a nuclear apocalypse is with regional or local confrontation than it was in a global confrontation. But one thing is clear: It is of an order greater.

DETERRENCE: THE REGIONAL VETO

Many countries, which at the present time have a strong influence on the world situation and determine the geopolitical reality on the regional level, find themselves excluded from the important process of control and regulation in the world arena. The world gradually realized the need to build its relations not on a nuclear or power basis, but by creating an atmosphere of trust

and communication. Yet an unwillingness to be rid of the power component has put a serious brake on the process.

It is clear that this development of the situation in world politics, built without reference to the global changes that occurred in the course of (or in the beginning of) the last decade of the twentieth century, would not suit many developed and developing countries. This and other motivations have brought about a new reality – *the multipolar polynuclear world.*

An open demonstration of the polynuclear aspect became the object of intense and just criticism from the world community. The long-standing value system of mutually stable parity and full deterrence could not absorb the new level of nuclear relations. At the same time, the numerous accusations that were made against the new nuclear powers of the third world have had a boomerang effect, it seems to me. The major nuclear powers were criticizing the new "power centers" for causing the same dangers that they themselves had once generated in the international arena.

Particular accusations that the new nuclear powers lack the culture of strategic restraint, which will in turn lead to nuclear fire, seem particularly inappropriate and unjustified.

But the possible lack of deterrent culture may not be fatal at all, as we've seen over the course of half a century. The nuclear pioneers, who are now in the Big Five of the nonproliferation treaty, also lacked a school or culture of deterrence strategy in the early stages of the evolution of nuclear arms. It formed gradually and is still forming, going through numerous stages of non-restraint.

Moreover, many of the official nuclear powers, before they acquired atomic weapons, operated under completely different military world views and categories of thinking and had only the vaguest idea of the subtleties of deterrence and enforced pacifism, since they did not exist.

An obvious example is the TNT history of the major nuclear powers. Right up to World War II and the creation of the bomb, Western military thought espoused the strategy of destruction, expressed by Karl von Clausewitz. The ideal embodiment of the strategy was in General H. Huderian, who felt that the shortest line between two geographical points can be laid with the help of a straight and destructive iron wedge. It took a bigger iron wedge to destroy that one. The theoreticians of the twentieth century realized that Clausewitz's theory did not just belong in the last century, it was the last century.

In the gunpowder period, the main component of Western military doctrine was the opportunity to make a strike and cause unacceptable damage. From this point the pragmatic policy of the leading western powers was directed at an incredible increase of the force of their nuclear weapons. The concept of threatening deterrence, based on mutual assured destruction, has a rather simple postulate: *Self-preservation takes priority over the desire to destroy an enemy.* This lies at the basis of enforced pacifism in both the attacker and the attacked: You can't attack (sudden strike), and it's dangerous to forestall an attack (preventive strike).

But with further development of the conceptual theory of nuclear weapons and cognizance of the modern role of weapons of mass destruction, a shift occurred in the ideas of the strategic thinking from West to East. The concept of indirect action, or victory by design or intention, developed by Suntzu, the Chinese military leader and philosopher who lived before our common era, entered the sphere of nuclear relations. The basis of the Eastern concept of deterrence is the postulate that the very existence of nuclear weapons, regardless of quantity or quality, serve as a necessary and adequate condition of deterrence. It must be remembered that the arguments ending with, "You must join the Treaty on Nonproliferation", or, "You are obliged

to obey the Comprehensive Test Ban Treaty", are totally unacceptable and simply dangerous. The duty of the world nuclear powers before the security of humanity is much higher than the duty of the new nuclear world. The major nuclear powers should have been saving the world from nuclear weapons for over 30 years now, without the nonproliferation treaty. But it hasn't happened. Something else has. The new attitude is: nuclear weapons are an object that should have been destroyed, but we just haven't gotten around to it.

Now nuclear weapons are a tool of international politics and arguments in international relations. The system of international relations turned around at some point: it's no longer nuclear weapons for the world, but the world for nuclear weapons. They have gone beyond politics and are independent of them. Atomic weapons no longer serve the major powers, the countries serve them. The measure of weight in international relations is not bushels or barrels, but kilotons and megatons.

From the Balance of Power to Nuclear Self-sufficiency

The logic of development in international relations on the nuclear level has led to a change in the very essence of the nuclear arms race. More accurately, the mechanism of the arms race before the collapse of the U.S.S.R. functioned without any logic or common sense. Both superpowers were determined to surpass the other in number and quality. Both superpowers wanted to leave their rival behind and responded in kind to each new breakthrough in military nuclear technology.

The result was a ridiculous situation: The United States and the U.S.S.R. could destroy each other totally tens of times over. It goes without saying that the arms race was spurred on by the numerous allies of the superpowers, who formed two antagonistic camps: NATO and the Warsaw Pact. They had to be taken

into account in their strategic plans and kept under nuclear control. The situation was absurd. The concept of balance of powers led to a blatant anachronism: huge expenditures and human resources were spent by the two great powers in order to be able to liquidate not only the military forces of the enemy but to destroy many times over the state itself – even entire continents. The mad nuclear arms race sometimes resembled the ideal embodiment of Zeno's famous aporia. The paradoxical philosopher and sophist claimed that a runner can never catch a turtle because, even though the runner covers a relatively large distance, in that time the turtle covers some ground, too. However small. And so unto infinity. As a result, the runner cannot in principle catch or pass the turtle. It doesn't matter who's the turtle and who's the runner. What matters is that the United States and the U.S.S.R. would have played at this race eternally, without catching up with or passing each other.

Actually, military strategic thought eventually came to the conclusion that the deterrent or peace-keeping factor is not the balance of power but the very existence of nuclear weapons with the corresponding complex of warning and carrying systems.

The concept of deterrence based on Sun Tzu's "victory by intention" found its embodiment in the nuclear strategies of the People's Republic of China and France. It is only now, in the multipolar world, that the concept of deterrence based not on the balance of power but on nuclear self-sufficiency has found practical embodiment.

I have reason to believe that this simple thought must lie at the base of the concept of nuclear disarmament in our modern world. The motivation for disarmament must not be the desire to minimize the level of nuclear parity or balance but the simple recognition that the very existence of atomic weapons, regardless of their number and quality, is sufficient to coerce the potential enemy to enforced pacifism.

From Deterrence to Universalizing

If you don't consider nuclear attack as a unique form of proliferation of atomic weapons, then you could say that the main drawback of the Treaty on the Nonproliferation of Nuclear Weapons is that the treaty does not provide any safeguards of nuclear security for non-nuclear countries from the depository countries. Moreover, the concept of safeguards (except for the IAEA safeguards) simply does not enter the structure of the nonproliferation treaty, despite the condition of *compromise universality* including such safeguards in a covert but definite form.

The substantial shortcoming of the treaty is that the system of safeguards governing nuclear security is not a component part of international global and regional security. Nuclear safeguards are present only in the form of corresponding United Nations resolutions or even in the form of special agreements and protocols, as in the case with Kazakhstan, which received guarantees of security from the leading nuclear powers through a special agreement.

The absence of safeguards is particularly dangerous in the context of the new role of nuclear weapons and their technical transformation. Atomic weapons today are not the "archaic" mechanisms of 1945; they are an ensemble of atomic and thermonuclear devices of the most varied modifications and types for a broad circle of tasks. They are constantly evolving and mutating, taking on all kinds of shapes and qualities – often the most unexpected and extremely specialized ones. It may be that it's not the countries but the nuclear weapons themselves getting ready to show their "best side" in every situation and under every circumstance – for instance, in the next global restructuring of the world on the regional level.

So it is very easy to note that the evolution of nuclear weapons quite naturally fits in with the character of the current state

of international relations. Let's try to imagine an extremely exaggerated and not quite chronologically accurate analogy, albeit a very typical one, of the evolution of nuclear weapons and their mutual tie with the system of international values:

- saving humanity – the first low-yield atom bomb;
- appearance of confrontation – the second atom bomb;
- rivalry – the hydrogen bomb;
- exacerbation of relations – the superpowerful thermonuclear bomb;
- peaceful coexistence – the reduction of yield in the hydrogen charges;
- the peak of the Cold War – the neutron bomb;
- the negotiation process – weakening of yields; drop in bipolarity – partial liquidation;
- multipolar world – selective nuclear bombs, mini-nukes, cluster weapons with nuclear charges, atomic penetrators, supersonic nuclear shrapnel, and the clean thermonuclear bomb. And so on.

Selection, options, a significant reduction in the yield of nuclear weapons and their turn toward exotic and specific devices create the false impression that nuclear weapons are conventional weapons for solving conventional strategic and tactical issues on any level of confrontation. The most dangerous aspect is that this shows *the removal of the psychological barrier about using them.*

When a public figure was asked after World War I when the second one would take place, he said, "In 20 years, when there is a new generation that does not know the horrors of the first war". Two generations have already grown since World War II, generations that do not know what war is. Two generations have grown up since the tragedy of Hiroshima and Nagasaki. *The threat of total destruction* is being pushed out of consciousness by *the threat of the non-employment of nuclear weapons* and the formation of the effect of habituation toward them.

How does the danger of unification and universalizing of nuclear weapons manifest itself? The strategy of planned nuclear deterrence is gradually being transformed into a strategy of expanded deterrence, and that strategy is gradually being reduced to lower components.

There was an unspoken agreement that even if a nuclear power was involved through intermediaries, no matter what the situation in the conflict zone, there could be no thought of using atomic weapons. We are not talking about hypothetical variants of possible use. North Korea, for instance, crossing the 44th parallel and, knowing the alliance responsibilities of the United States to Seoul, was obviously unconcerned about a retaliatory strike with nuclear arms. Those were the rules of the game: action had to be equal to reaction. Especially since the nuclear rearguard was there.

But the evolution of nuclear weapons did not stop. Strategic weapons became more effective in both yield and delivery systems. Tactical nuclear weapons were gradually modernized, and the sphere of their competence was significantly enlarged.

There was a quantitative shift: *Nuclear weapons became an active component in ordinary arms.* The delivery methods for nuclear weapons were no longer just intercontinental ballistic and cruise missiles, submarines and silos, but ordinary fighter jets, and even cannons. The sphere of deployment of tactical atomic weapons became universal.

The reshaping of nuclear charges, related to their deployment from ICBMs to the shells of infantry long-range weapons, radically changes the character of local wars, which may be fought by major nuclear powers. There appears a new category of atomic weapons as a means of deterrence.

The strategic and tactical goal of nuclear weapons becomes not deterring a possible mutual assured destruction, but a total, or final, warning of the enemy, regardless of his nuclear or non-

nuclear status. Total warning is understood simply – it is a situation in which a guaranteed nuclear counterblow is inevitable, be it delivered by ballistic missile, cannon shell, or dropped bomb, regardless of whether the probable aggressor uses conventional weapons or nuclear ones. This means that an attack is always, in all circumstances, answered in the same way: with an atomic device, specialized or exotic, of high or low yield.

This tendency to break up the one "red button" into dozens, or even hundreds, is quite visible. The small buttons would be passed down to a lower level of command, to units of tactical significance, where, depending on the circumstances and military goals, the commander might have the ability to decide independently on the use of tactical low-yield nuclear weapons.

From that it follows that automatically equipping conventional weapons with low-yield nuclear warheads means that if a nuclear power is involved in a conflict, even on the lower level and against any country at all, sooner or later it will be impossible to avoid using nuclear weapons. War will not accept too many rules, and I think that many military leaders will not be able to resist the temptation to deliver a nuclear blow against the enemy and thereby guarantee victory.

This holds for all forms of possible application: from total annihilation of the territory of a hostile state to surgical strikes against a concentration of the enemy in an ordinary battle field. From big to small, from prohibited to all-permitted – that is the evolution of atomic weapons, a consequence of its universality.

The sphere of application of nuclear weapons could expand. Let's remember that in the bipolar world, strategic concepts presupposed the use of nuclear weapons only against the main probable enemy. In our time, the sphere of use of nuclear weapons has expanded several times. I can list at least three such spheres of application. The first and primary sphere – the use of the military atom against the main probable enemy – remains.

The second is that a number of countries of the third world either show nuclear ambitions or have already become nuclear powers. They could, if there were a change in circumstances, easily reanimate their former atomic projects. The former case provides for the use of nuclear arms as a warning or preventive measure following the paradigm of either delivering a powerful warning blow or destroying nuclear objects with nuclear weapons.

And then there is the third – the dangerous – opportunity to use nuclear weapons against non-state subjects, no matter on whose territory they are located. Let us say that a terrorist group has executed a very large terrorist act. If the victim country feels that it has suffered "unacceptable damage", it could use some form of tactical nuclear weapons and retaliate, counting on a *guaranteed* total destruction of the source of individual or group threat – perhaps even without informing the government of the territory where the source of the terrorist threat is located.

The system of nuclearizing conventional weapons will eventually lead to non-nuclear states losing even the potential intention of reconnoiter through combat to see if nuclear weapons will be used. In this regard, the aggression of Sadam Hussein, circa 1990, can be seen as reconnaissance through battle regarding the responses of the probable enemy. Hussein himself, naturally, did not discount the possibility of the atom bomb being used against him in the case of further escalation of the Persian Gulf conflict. But the uncertainty factor remained, even in that case.

The nuclearization of conventional weapons will fully do away with the uncertainty factor in that sense. And with the local right of weapon choice, an atomic response or warning blow will follow immediately and unconditionally. There is no point in discussing here whether the real embodiment of the concept of nuclear deterrence on the "individual" level is good or bad. How-

ever, the probability of employment of universal tactical atomic weapons as a "punishment", "warning", or "rendering harmless" will rise many times over.

The strategy of deterrence is gradually shifting its center of gravity toward the *"strategy of deterrence with partial employment"* of nuclear weapons on the regional, group, and individual levels.

Once upon a time, deterrence was created by strategic nuclear arms. "Partial employment", in turn, will be created by single-use or predictable use of extremely precise nuclear weapons: low-yield charges such as precision nuclear warheads with a yield of a few tons of TNT equivalent, with laser targeting, diametrical bombs, radiofrequency bombs, scalpel warheads, and many other representatives of still-extant nuclear flora and fauna. *Danger is not only where you look for it, there can be as much danger where you are.*

FROM BIPOLARITY TO BIPOLARITY

It is not my intention to delve thoroughly and fundamentally into the many modern theories of the future of global structuring or restructuring of the world order and the dynamic of geopolitical processes. While recognizing the profundity of these issues and the scholarly and scientific knowledge of the authors of well-known geostrategic concepts, I must note that, unfortunately, they are all limited to predictions of the end of the world or to rebuttals of those predictions.

These predictions often suggest that some superpower will remain a superpower if it follows the advice of the given analyst or will cease being one if some other power dares to look to the left rather than the right or employs the services of another analyst. I'm not even talking about the actual level of the analysis, which approaches being totally useful. For example: if

countries A and B become friends with each other, then country C will have nothing for itself in the region. But if they argue, then an equilateral triangle ABC may form in the region. Wow. Really profound. It is a wonder these people even have jobs.

Going deeper into the theoretical depths creates the impression that some futurologists base their predictions on tea leaves instead of logic. And right and mighty will be the "theoretician" whose opinion accidentally coincides with the grim reality of the future. The extreme limits of absurdity are achieved in some conceptual theories of nuclear strategy and tactics. Despite the deep furrows already made by pseudo-scientific theories, there is still a huge layer of unplowed soil for logical and illogical dissection of the nuclear puzzle.

Take for instance, the concept of "acceptable damage". Clearing away the verbal clutter, the meaning of "acceptable damage" is that with a preliminary evaluation of the degree of "acceptability" or "unacceptability" of civilian and military losses, strategic victory in a nuclear conflict is absolutely assured, since we will win to a greater degree than the enemy. Lets say, of 100 million people, 40 million will survive in an "acceptable damage" scenario, while if we strike a blow of "unacceptable damage" upon our enemy, only 10 million people will survive out of 100 million. Can we start the nuclear war now?

Let's say that the result of a conflict with a country with a very weak nuclear arsenal is a single retaliatory nuclear attack on the capital. Can we consider the destruction of the capital and the death of millions of people "acceptable damage"? I wouldn't want to be the strategist who had to console the inhabitants of the capital that if there were a small nuclear war; their deaths would be totally "acceptable".

Of course, there are many geostrategic and geopolitical factors; the list is very long. Nevertheless, only one statement does not need to be proved: all those so-called nuclear strategic and

tactical concepts are a mockery of common sense and nothing but casuistry. But the fate of humanity hangs on that casuistry. Do "acceptable damage" and the lives of millions of peaceful people not belong in completely different weight categories?

Fortunately, heads of state base their policies on practical considerations, rather than abstract theoretical ones. They are required to understand that the world is much more complex than the thickest and most acclaimed monograph, and that once the signal, "Game Over" (God forbid, a nuclear game) flashes, a political game cannot be started over from scratch with all the time in the world again.

Theoretical wishes often collapse under the pressure of unilateral reality. A manifestation of that reality is a new order – the multipolar nuclear world with two systems formed, the official nuclear powers and the nuclear powers in the nonalignment movement.

Monopolarity will soon experience a downturn, because the growing number of regional powers and their clearly independent and individual foreign policies will not foster the cult of authority in one superpower, even a global one. The growing military and economic potential of a regional superpower automatically weakens the positions of the other major nuclear powers in that region. A chain reaction forming an ensemble of regional nuclear powers will inevitably lead to the dominating influence and absolute authority of the major nuclear powers, sooner or later narrowing to the borders of their direct influence.

And this will happen even though the total power potential of the Big Five will be immeasurably higher than the corresponding potential of individual regional powers or comparable to the total military potential of a given regional bloc.

As the dynamic of development of individual countries shows, this is a temporary phenomenon, especially if a country sets as its goal acceleration of its military strength. As a result,

realizing the impossibility of totally expanding their influence, the regional powers might decide that achieving military parity is possible and then exert all their efforts toward that hypothetical goal.

From the point of view of international law, world balance is achieved through the existence of two categories of countries with nuclear potential. On the one hand, there are the countries with nuclear weapons and a corresponding missile and aviation complex. On the other hand, there will be many countries with nuclear potential. The former are the primary nuclear powers. The second category is for countries with nuclear weapons but no membership in the nonproliferation treaty, including India, Pakistan and Israel. These are nonaligned countries that, by possessing nuclear weapons, are in contradiction to the nonproliferation treaty. In the future, a number of threshold countries may join this nuclear bloc, including Brazil, North Korea, Iraq and Iran.

The disparity of nuclear potential between the two blocs – "treaty" and "nonaligned" – is glaring. I doubt that in the near future the nuclear potential of the unaligned bloc will reach even approximate parity with the potential of the treaty bloc. That holds for conventional weapons, too.

The gap between the nonproliferation treaty and the nonaligned movement will be reduced over time, encouraged by the following factors:

1. Continuing processes on limitations of nuclear weapons between the main holders – the United States and Russia – in the framework of mutual Arms Reduction Talks-3;

2. Unilateral nuclear disarmament by one of the members of the nonproliferation treaty for socioeconomic reasons, which will lead to a reduction in the treaty's nuclear potential;

3. Impossibility of further growth and nuclear expansion among the member states of the nonproliferation treaty, if they strictly adhere to the basic principles of the treaty;

4. A growing schism among the treaty members through a new geopolitical situation, in which individual developing countries could consider having tactical nuclear weapons a necessity and therefore be automatically expelled from the nonproliferation treaty;

5. Continuation of a local nuclear arms race between India and Pakistan, the main nuclear powers in the nonalignment movement;

6. New nuclear powers, for the moment still threshold or pre-threshold, which are not tied to the nonproliferation treaty or are not planning to continue their membership in the treaty; and

7. More nonproliferation treaty countries approaching the threshold level.

The former bipolar nuclear confrontation between NATO and the Warsaw Pact will be replaced by bipolar nuclear confrontation between nonproliferation treaty nations and nonalignment movement nations. There will be a short-lived multipolar period of regulating internal contradictions, numerical unbalance, and gradual achievement of nuclear parity.

The shift in accent from achieving total universality for the nonproliferation treaty to its "indefinite and unconditional" extension radically changed the regimen of global and regional security.

The permanence of the nonproliferation treaty has shown that in the near future nuclear weapons will continue to be a powerful and actual tool in international politics. We have seen that the process of modernizing nuclear weapons will not be stopped any time soon.

Movements toward universality, declared at the Conference of 1995, did not take on visible and constructive forms. Moreover, the nuclear status of certain countries in the nonalignment movement was completely ignored. The permanent decision

showed that the dynamic processes of the growing establishment of new economic proportions on the world arena do not fit into the conservative structure of the nonproliferation treaty model circa 1968.

But a working mechanism for regional security is impossible without it being universal. For only a universal system of security can solve a dual task: safeguarding global and regional security. A more effective regimen of global and regional nuclear security a new universal Comprehensive Treaty on the Horizontal and Vertical Nonproliferation of Nuclear Weapons is needed – a treaty that will respond in full to the principle of general and unconditional universality and recognize the existence of a new reality and the evolution of nuclear weapons. A form of rational compromise must be found in which absolutely every country is included in the negotiation process.

Reduction of nuclear arms within the new treaty must be conducted on proportional principles, not on parity. The power and might of modern nuclear weapons is such that the global threat lies not in its numbers but in its very existence. In a proportional scheme, all nuclear weapons of all countries with nuclear potential are subject to reduction.

In parity reduction, the amount of destroyed weapons is the same and does not depend on how many the parties actually have. In proportion reduction, there is a coefficient, in accordance with which the reduction of nuclear weapons takes place.

For example, state A has 1,000 nuclear weapons. State B has 500. With a coefficient of 2, State A will have 500 left and State B, 250. That is, both sides will have maintained nuclear weapons, but the state with the greater amount reduces by many more. A similar scheme would apply to delivery systems for atomic weapons, depending on their class. From a financial point of view, this scheme retains a fair proportion of expenditures for destroying nuclear weapons. The treaty must also have

a clear definition and restriction of horizontal and vertical expansion.

The concept of horizontal nonproliferation must unambivalently and unconditionally ban all possible forms of nuclear proliferation, such as the transfer of nuclear weapons and fissionable materials of weapons use, the sale of nuclear weapons to third parties, the transfer of nuclear weapons by agreement, the deployment of nuclear weapons on foreign territory, and other forms of proliferation.

Vertical nonproliferation must specify that counties with nuclear weapons must not undertake modernization (qualitative proliferation) or increase of total yield (qualitative proliferation) of nuclear weapons.

Vertical proliferation, regardless of motive, inevitably leads to horizontal proliferation as well. A tree grows upward, but at the same time, its crown and leaves shade more and more of the land around it.

As one of the preconditions for the passage of a new universal Treaty on the Vertical and Horizontal Nonproliferation of Nuclear Weapons, reasonable compromises must be found to bring together all countries of the world – official and observer, pacifist and nuclear – into its preparation.

THE CONSTRUCTION OF A NUCLEAR-FREE WORLD

The world of the twenty-first century has become multipolar. It's become polynuclear. The system of global and regional security, however, has remained the same. We have entered a new age, bringing along the thinking of the old one.

"Ostrich" politics, characterized by ignoring the obvious and an unwillingness to give up atomic positions, could lead us to a new, global, level of nuclear confrontation. The greatest danger

lies in the fact that we are applying our energies not toward taking the non-nuclear path but toward preparations for the new spiral in confrontation.

Hypothetical scenarios of nuclear conflicts have turned into a series of standardized schemes for solving regional and local conflicts. If humanity needs a severe lesson, I'm afraid that there is a real danger of it happening. But is it necessary? Is the only spur to action a bad experience?

Either we at last have real and concrete general nuclear disarmament or, sooner or later, we will have a nuclear apocalypse on the regional and then the global level.

The potential for collective action has not been exhausted. On the contrary, the most rational path in the process of building a general regimen of global and regional security lies in overcoming the mentality of nuclear realpolitik. It lies in a seemingly trite yet powerful paradigm – the absolute sanctity of human life. Rather than seeking solutions to destroy ourselves many times over, we must multiply by many times the atmosphere of trust, mutual understanding, and peaceful regulation.

In Kazakhstan we have our own way to construct a non-nuclear world: we believe in taking real steps on the path to mutual trust and "indefinite and unconditional" regulation of nuclear weapons. Kazakhstan, unique in the world and in the system of international nuclear relations, technically has the right to simultaneously possess and not possess nuclear weapons. This is the paradox of our era brought about by the nonproliferation treaty. We have made the conscious choice supporting peace and nonviolence.

The start of the new millennium marks the tenth year of our independence, ten years in which are concentrated the classic path of centuries, and even millennia, toward independence taken by many nations, ten years of temporary collapse, during which we went from a centrally planned system to a diverse

economy, from an absolutely ideologized society to an open and free consciousness, from being a country with a huge nuclear potential to being a state completely free of nuclear weapons.

People have stopped thinking in clichés, have thrown off the old attitudes, and now feel like full-fledged members of an open society headed toward the establishment and development of democratic values and institutions. The basis of our worldview is a fundamental rejection of escalation of conflicts in the territory of Kazakhstan. The imperative for peace and non-conflict have been raised to the rank of state policy in our country.

I am sincerely pleased that not a single classical or modern theory of global and local conflicts developed by strategists and political scientists I esteem has found practical embodiment on the soil of Kazakhstan. This is a distinction of our Kazakhstan worldview; this is part of our national wisdom.

Our foreign policy is a policy of the center state in the Eurasian supercontinent. It is a policy of three rings of territorial security and forestalling external threats.

The first security ring is a multivector policy. The Republic of Kazakhstan has no pretensions toward any country in the world and has a continual policy of peaceful regulation of existing and possible pretensions on the part of other countries.

The second ring is participation in the Treaty on the Nonproliferation of Nuclear Weapons, in accordance with which we, as a non-nuclear state, have concrete safeguards of security against external nuclear threats.

The third ring is our participation in defense blocs and agreements with adjacent states.

We left the nuclear attributes in the last century. The real strength and power of a country and nation is not in general demonstrations of nuclear weapons, but in not using them. This is the linchpin of our statehood, our national wisdom, and our national idea.

Permanent peace is the basis of socioeconomic progress, the result of interethnic loyalty, and a factor in global and regional integration.

There is no happy future for a country without a solid and fundamental peace as an essential element in the establishment of the national economy, traditional international agreements, and neighborly and mutually beneficial relations with other countries.

EPILOGUE

In my life I have had the fortune to see the world and to visit many parts and corners of the planet. A person can know the story of all seven legendary marvels of the world without knowing the most important and true marvel: the world in its variety. Modern Tokyo, amazingly crafted of a strange combination of ancient tradition and a technotronic landscape. Noisy and motley New York, which is like an aquarium, displays the life of every country and nation. The brilliant panorama of Vienna, a material embodiment of Mozart's musical harmony. The many faces and people of Delhi, floating in the hot haze of a tropical sun. Colorful and joyous London, not the least bit stuffy or stately. ...I have had the world spread out before me.

And here's what I have noticed: Amid all that variety of sights and sounds, palaces and hovels, towers of churches, television centers, and construction cranes, one thing is the same everywhere – children playing noisily, carefree and daring. Children who have not yet created problems for themselves and who naively assume that the world, like the atom, is indivisible.

Besides my mandatory annual meetings, I travel around the country a lot and see my countrymen almost daily; on school holiday the best students are brought on excursions to the Presidential Palace. Sometimes I can watch unobserved at how boys behave naturally.

And right now, from my office window, I can see a small friendly gang having a conference not far from the wrought-iron

filigree fence of my residence. A short boy, apparently the leader of the group, is trying to persuade the rest, who are staring at him mouths agape. Finally, without having convinced them, he moves apart from the group, reaches inside his shirt, and walks along the fence. Seeing him start out, the rest jump up and run off shouting. I can see the brave lad's agitation. Taking his white round missile, the boy tosses it over the fence and runs off. But by the projectile's slow movement and short distance covered I can tell that it's not a stone or even a tennis ball.

"Go see what's there", I said, sending off an assistant who soon returned with a crumpled piece of paper bearing a note that begins with the words: "To the President". The letter was signed, and the only surprise was in its method of delivery.

The world lives and recognizes itself through the loss of illusions. We all have our lists of discovering reality, a biography of freeing ourselves from the power of false impressions. Awakening is irreversible, whatever tricks our perception, situational changes, and subjective selectivity may try to play on us. The sooner it comes the more chances we have of finding salvation through an admission of, "We lived the wrong way, we thought the wrong way". Before the scales show that all the gold of the world is outweighed by the truths about the happiness of life in health, consciousness, labor, love, and peace with our Creator, ourselves and those like us, our mistakes – like the sickle forgotten in the grass to the great pain of someone's bare foot – can harm not just one person, but make all of humanity limp. This is especially true because, as the father of the American hydrogen bomb, Edward Teller, once joked, "People are so inventive in their mistakes that it is simply impossible to prevent them all".

"If the era turns into a fox, turn into a borzoi hound and stop its run", was the formulation provided by kazakh folklore, long before the great humanitarian discoveries of Michel Foucault and Martin Heidegger. In kazakh folklore such unflattering

terms as "mistake of creation", "property without guarantees", and "slyest of worlds" are used for life on earth.

In that sense, the twentieth century, which died in its calendar boundaries, is less like history, flowing in a measured way in the riverbed of time and space, and more like a geyser of human consciousness, washing away, carving up, and reforming space and time, giving limits and terms, volumes and segments to its chaotic spread. But here is a puzzle: Despite the focused and active reason of history, passive time-space keeps trying, unsuccessfully, to slip out, twist away, and break up in the hands that hold it, in order to continue its meaningless and totally unpragmatic, wild wandering.

As a result of that trick, the global community has found itself, on the eve of the twenty-first century, in a trap between two types of attitude toward reality: perceptions that reflect reality and perceptions that construct reality.

The twentieth century, which both anticipated and disappointed people's hopes, incorporated the start of the nuclear era into the planet's history, thereby intensifying its load of intrigues, shocks, extraordinary episodes, and unheard-of events.

The events differ in terms of their local, regional, or global significance, but the results allow us to make a generalization about the main quality of the first nuclear age: its leitmotif and linchpin were the conflict between a thing and its packaging, between the essence of political reality and its external manifestations.

The space-time chaos enjoyed a laugh in the twentieth century over the self-reliant, self-styled "creators" and "authors" of history: by the end of the century, the hourglass turned over with an incredible, unexpected distribution of sand. In this upside-down configuration, this phenomenon behaved falsely and illogically, rushing from one extreme to another. But before the curtain fell there would be a breakthrough that would reveal

the essence of what was occurring, show the true nature of the personae dramatis and the circumstances, explain the meaning of the ongoing changes, and offer a semblance of normalization for the process.

In conflicts between groups, and certainly between civilizations, the myth that "we are the good guys" encourages in every society a desire for heroes, which has the strange quality of being invisible at the height of an extreme situation and of flourishing in the period before its onset, and especially after the passing of a fateful situation.

The battle of the bipolar world was also filled with heroic and romantic ideals and motives. But no heroic epic or chivalrous novel came out of it. Toward the end of the show, the knights vanished somewhere: either they came to private terms or they sold their armor and got lost in the crowd seeking bread and circuses. Or perhaps, historians had rushed to judgment in proclaiming the end of history. Instead of changing when they were supposed to, the genres got mixed.

"Two things are particularly difficult: writing lexicons and grammars", Gottfried Hermann once noted wisely, and his perception applies to more than linguistics. Those who avoid the task are doomed to degradation, linguistic clumsiness, and misunderstanding. In our times, anachronistic examples of phraseology from the Cold War, and even older and more barbaric conditions, show up in great abundance.

There are people living in the twenty-first century who are not offended by statements like, "Peace is our greatest victory". And this is not a question of poor education; this is an intentional and irresponsible conviction that peace, you see, can be achieved through war; and war, no more, no less, is an instrument for creating peace. The point is in a craven unwillingness, rising from the warm bed of yesterday's dreams, to step into the bracing coolness of the new dawn.

The phenomenon of "holes in time" is manifest also in the threshold countries and junior members of the nuclear club honor the fathers of their newborn missiles and bombs as national heroes, while in the senior nuclear powers, and especially in countries that have suffered from atomic catastrophes, there is an understanding that von Clausewitz's attitude toward war is unacceptable as policy.

But even in the states that have taken the path of reducing the threat, there are still eagles who do not wish to catch flies and whom the people are more willing to compare to cats that do not catch mice.

"As you leave, shut the era behind you!" It's time to give this reminder to people who are not ashamed to look like escapees from a wax museum and trying to force their old views on today's world.

The manner of thinking in old categories, worthy of Procrustes, and seeing the world in black and white, has not disappeared from politics. It is strange to watch entire armies of politicians, diplomats, experts, and journalists – some with gray hair, some very young – regarding the latest phenomena – events, facts, and tendencies – through foggy prisms that have long lost their value. This darkens the atmosphere in the moral and psychological climate, too, when the opposing parties look but do not see, speak but do not say, hear but do not listen, touch but do not feel, and their arguments are directed past each other instead of toward each other.

With its nuclear-free experience, Kazakhstan has not only created an effective means of political communication but successfully demonstrates its functionality, even though for now we can attest only to the beginning of this path.

The attractiveness of Kazakhstan as concept and model lies in the fact that while negating the negative (known colloquially as destruction, loss, and death), we do not talk about *what the*

world should not be like (there are barroom political analysts and chatty cabdrivers for that) but about *what it should be,* and we support our position with paradigms, guidelines, and standards tested on ourselves.

In one of my books on the historic fate of my people, I wrote that the kazakh nation has the right not to be ashamed of a single page of its past history. And after ten years of independent development I can say that the multinational people of the Republic of Kazakhstan have nothing to be ashamed of, embarrassed by, or to justify to the world.

We did away with our nuclear fears and we freed all those who feared us from them.

We chased away illusions and made room in our land, our hearts, and our minds for realism.

We built a new non-nuclear history for the country, laying the foundation for a new narrative tradition about how to rise above a world threat. But this history is alive only when there is a circle of hearing and discussion – when the word lives on in the collective consciousness and in action.

Non-nuclear geopolitical rhetoric generously promises to become the smithy in which can be forged the materials and instruments to safeguard the security of the new world throughout the third millennium.

If you want to look into the face of the past, do not rush to archeological digs or quiet libraries. Our past is in us, in the struggle of old and new.

If you want to see the face of the future, do not ask futurologists. It is running around under your windows in a gang of laughing and playing children. Sometimes it reminds you of its existence by sending you notes and signs, and it requires a little patience and intuition to learn the sounds and letters of the future and begin mastering its easy and fresh language.

I experienced a moment of meeting this future as I read the letter composed and delivered to my residence by the brave boy.

I do not have the right to reveal the secret of his correspondence, but I can tell you that it was a letter from a young citizen with a list of hard problems and a hope to change the adult world, unprotected from error and callousness.

We must continue to live and work, to readdress problems and misunderstandings, for anything else would be a betrayal of our own childhood.

Our future lives next to us in dreams and sorrows about us. And there is no one but us to protect it.

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