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Abstract

In February 2023, Vladimir Putin announced the suspension of the START Treaty which was central to the shaky, post-Cold War nuclear framework that applied to the major signatories of the Nuclear Non-Proliferation Treaty. As the Ukraine war grinds on, it has raised the spectre of nuclear escalation, not only in Ukraine but also across the Asia Pacific. The Bulletin of Atomic Scientists' doomsday clock recently moved thirty seconds closer to midnight.1The problem we confront is now far more complex and multifaceted than the old Cold War superpower balance. To explore this confused and confusing geopolitical landscape the authors of this report have adopted a multidisciplinary approach embracing to try to understand the role that nuclear strategy might play in a post liberal institutional world order divided into geopolitical blocs.

Introduction

In February 2023, Vladimir Putin announced the suspension of the START Treaty which was central to the shaky, post-Cold War nuclear framework that applied to the major signatories of the Nuclear Non-Proliferation Treaty. As the Ukraine war grinds on, it has raised the spectre of nuclear escalation, not only in Ukraine but also across the Asia Pacific. The Bulletin of Atomic Scientists' doomsday clock recently moved thirty seconds closer to midnight.[2] Russia is a nuclear power and, as Herman Kahn pointed out in *On Thermonuclear War* (1960), it is both necessary and prudent to consider a ladder of thermonuclear escalation leading to the possibility of total destruction.[3] In this context, Jeffrey Sachs is one of the few western commentators who views the current conflict placing the world in a potential nuclear stand-off to be as dangerous as was the Cuban missile crisis of 1962 and without any apparent awareness in the western media of what such a doomsday scenario might entail.[4] Indeed, Russia's suspension of the START treaty in February 2023 evoked little media attention. The subsequent decision by Belarus in March to 'host' Russian tactical nuclear weapons evoked only slightly more concern amongst members of the NATO alliance.[5]

To address the current nuclear threat, this report will examine how the superpowers of the time (just) avoided recourse to nuclear use during the Cold War. Yet, even as the Cold War ended post-Soviet Russia still emphasized the role of nuclear weapons in its defence planning. "We are now hearing what we used to say about Russians in the 1950s," one U.S. weapons expert commented in 1997: "Now the Russians are saying: 'We need nuclear weapons to compensate for (US) conventional superiority'."[6] Ukraine has also crystalised the problem emerging at the end of the cold war namely nuclear proliferation. Despite the agreement of a UN brokered Nuclear Non-Proliferation Treaty (1995), by the third decade of the twenty first century, North Korea, Pakistan, India, Israel and Iran had or would soon have a nuclear strike capacity. There was also the further possibility of a terror organisation accessing nuclear technology or creating a dirty bomb. Moreover, because of the long wars of the early twentieth century and western backed regime change in the Middle East, notably Iraq and Libya, it has become clear that what the West defines as 'rogue' regimes would not be subject to intervention if they possessed a nuclear deterrent. The problem we confront therefore is now far more complex and multifaceted than the old Cold War superpower balance. The nuclear threat in the twenty first century reflects two developments in the international regime at the end of the Cold War that became increasingly evident after the western financial crisis 2008-16, the rise of populism and the impact of the Covid-10 lockdown on the global economy after 2020.

Yet at the end of the Cold War it was widely assumed, at least in the West, that with the collapse of the Soviet Union, the world was *en route* to a secular, broadly democratic, liberal institutional end of history. From leading Ivy League school international relation departments, to the world economic forum meeting on the magic mountaintop of Davos, academics, business leaders and the mainstream media subscribed to the view that Tony Blair articulated in his 2010 autobiography: 'for almost twenty years, after 1989, the West

set the agenda, to which others reacted. Some supported us, and some opposed us, but the direction of the globe, the destination to which history appeared to march, seemed chosen by us.'[7]

This 'third way' assumed liberal democratic capitalism as the only viable ideology after 1991.[8] It announced the dawn of the American unipolar moment. The moral imperative contained in this iteration of Western triumphalism was that under American leadership, progressive values of human rights, social justice, capitalist economics, and liberal democratic governance would constitute a universal form of rule. Western progressive values were therefore 'globalised' as a procrustean framework into which states in the international system had to fit unless they wanted to be consigned to the club of failed or rogue states like North Korea, Iraq, Libya, Afghanistan, Syria and Iran, impoverished, marginalised, failed and/or outcast.[9] The unipolar moment offered the intoxicating prospect of a world refashioned according to liberal norms, where the technocratic application of 'good governance' and international aid could fix most problems and, when required, humanitarian intervention could remove particularly egregious rulers. British Prime Minister Tony Blair once again channelled the *zeitgeist*, in his 1999 'Chicago Speech'. He declared the rights of the 'international community' to intervene in states of concern, outlining an ideology of what came to be termed 'neo-liberalism'.[10]

However even in the 1990s there were signs that the historical inevitability of the liberal end of history already made non-Western regimes uneasy. This became more and more apparent with the inexorable rise of China after it joined the world trade organisation in 2001 and the US and its coalition partners became embroiled in 'forever' wars in the Middle East and Afghanistan. When Donald Trump reached the White House the liberal order began to rapidly unravel. Covid 19, economic lockdown, the rise of geoeconomics and the war in Ukraine sounded its death knell. We have now entered, without noticing, 'a darkling plain where ignorant armies clash by night'. In this new G2 world the western democracies seemingly confront the rising autocratic powers of Russia and China, at least according to President Biden as he stated in his speech in Warsaw in February 2023.

This new Cold War resembles the old one but is both more complex and multipolar than its twentieth century predecessor. Somewhat ironically, during the brief era when the West, or more particularly the US, and its spokespersons, like the ubiquitous Tony Blair, assumed they shaped the direction of the world, they ignored or seemed oblivious to the arms race occurring beyond the West particularly across the Middle East, South Asia and the Asia Pacific. The breakdown of the post Cold War nuclear non-proliferation regime only reinforced and reflected the evolving global dichotomy where a West tried to enforce what it considered international law and 'the rest', at best, paid lip service to this order whilst promoting their own distinctive understandings of domestic and regional order. The rise of the revisionist powers was further facilitated by the spread of nuclear capacities to states like North Korea and Iran, whilst the emergence of non-state actors like *Daesh* with the potential to assemble a dirty bomb only adumbrated the nuclear fallout from the breakdown of the liberal institutional order.

To explore this confused and confusing geopolitical landscape the authors of this report have adopted a multidisciplinary approach embracing history and international political science. To begin to understand the role that nuclear strategy might play in a post liberal institutional world order divided into geopolitical blocs, we need to re-examine the pertinence of the history of the Cold War and Cold War thinking on the ladder of nuclear escalation as well as the treaty regime that emerged in the course of Cold War 1.0. This forms the first part of the report. The report will then look more closely at Russian strategic thinking on the tactical use of nuclear weapons in the context of the end of the Cold War and the Kremlin's growing concern with its near abroad that came to a head in Ukraine after 2014. Whilst the war in Ukraine currently preoccupies the global media, less attention is given to the neglected but increasingly complex nuclear politics that have evolved in South and East Asia since the end of the Cold War and the extension of nuclear ambiguity to the international conduct of China, India, Pakistan and North Korea. This lacuna will be the subject of the third section of this report. Finally, we shall identify some significant and unresolved issues that have emerged from this analysis.

Part 1 American Cold War Nuclear Doctrine

Before the Doctrine a Dream

Before there was a doctrine there was a dream. It was an apocalyptic dream, and like most eschatological fantasies, its simplicity was marked by a savage beauty. The dream had a prophet whose revelations were at first whispered to a select few but later became codified in policy. The years were 1945-1949 and the prophet's name was General Curtis Lemay, who had commanded American air power in World War Two. General Lemay's wartime moniker, given him not so fondly by his pilots, was "Bombs Away Lemay", a name perfectly suited to the architect of the Tokyo firebombing which still ranks as the most destructive air strike in history.[11] Moreover, he further endeared himself to his men through his unique approach to improving the statistical accuracy of American bombing runs by having fighter pilots trail heavy bombers with orders to shoot them down if they drop their bombs before reaching the target and turn back to base.[12] In a word, General Curtis Lemay employed the direct approach to achieving a goal with little thought given to niceties, or even human compassion. He was a man of vision.

In 1945, following the nuclear strikes on Hiroshima and Nagasaki and Japan's subsequent surrender, the coming conflict with the Soviet Union was much on the minds of American policymakers. In 1945 the Yalta and Potsdam conferences effectively demarcated the borders of the Cold War in Europe.[13] On February 22, 1946, the American diplomat George Kennan sent his famous "Long Telegram" outlining ways to manage relations with the Soviet Union in the post-War world. The National Security Act of 1948 brought the Cold War into the world of policy while the CIA was founded in 1948.[14] Together, these events and policies were designed to manage the coming conflict between East and West over the long term and all sought to avoid a nuclear confrontation.

None of this found favour with General Curtis Lemay. In his view, an indefinite conflict with a Soviet empire that would only grow stronger with time made no sense whatsoever. The United States after all enjoyed a nuclear monopoly while the Russians could be expected to develop their own nuclear arsenal in the very near future. Rather than wait for such an eventuality, did it not make much more sense to make a preemptive strike on the Soviet Union and be done with the problem once and for all? The idea had a certain savage simplicity. It would have been the greatest crime against humanity in history, but in retrospect, should perhaps have been given more consideration than it actually received at the time.

President Truman wanted no part of it for obvious reasons. But he appointed General Lemay as the commander of the American Strategic Air Command (SAC), where he served from 1948-1957. From this position, he codified the dream in a document that became the first SAC Emergency War Plan in 1949.[15] The plan envisioned a Third World War in which the United States would drop 133 atomic bombs on 70 cities in the USSR. The conflict which he envisioned would last no more than 30 days, after which the survivors could bask in the freedom of a post-communist world. The dream died stillborn and was

soon replaced with two distinct and distinctly different nuclear doctrines that stood throughout the Cold War.

In 1951, General Douglas MacArthur in his farewell speech after having been shown the door by President Truman[16], would famously quip: "Old Soldiers never die, they just fade away." Curtis Lemay however, was not a man given to the slow fade. He was satirically portrayed as General "Buck" Turgidson, played by George C Scott, in the classic 1964 film "Doctor Strangelove." In 1968, he ran for Vice President on the third-party ticket headed by George Corley Wallace, which in American history was the last gasp of the pre-civil rights era segregationist South.[17] While General Lemay did not fade away, he did finally exit the American stage in 1990 with his death in Riverside, California.

Mutual Assured Destruction: Use 'em or lose 'em

On 29 August 1949 the Soviet acquisition of nuclear weapons became an irrevocable fact. With great fanfare, Stalin conducted the first Soviet nuclear test. With this, General LeMay's vision of a preemptive strike conducted by the only nuclear power in the world, the United States, was well and truly dead. Into the void came what would later be called the arms race in which both sides started to frantically build ever larger nuclear arsenals in the absolute belief that the other side was doing the same and that the enemy's purposes were invariably malign. This mirror imaging would mark the Cold War in its entirety, but was based, as we later learned, on utterly flawed assumptions. Specifically, The United States always enjoyed a marked nuclear superiority and, were it ready to accept significant losses, could have annihilated the Soviet Union at any time.[18] Out of this scramble to expand the American nuclear arsenal the doctrine of Mutually Assured Destruction (MAD) emerged. The central assumption that made MAD viable was that no rational actor would seriously contemplate the utter destruction of the world and that, moreover, the leaders of both the United States and the Soviet Union were rational men. This assumption played better in the 1950s and 1960s than it does in post-Trump America, but those were better days.

To understand the strange logic of the MAD doctrine, it is necessary to reconstruct the context of the time. American nuclear forces were based on a triad of delivery platforms.[19] The backbone of American nuclear forces was ICBM's (Intercontinental Ballistic Missiles). ICBM's were land based, housed in fixed silos, and in the terminology of the time, had the most bang for the buck. Over time ICBM's would become ever more complex, vastly expanding not only payload but delivery capability with such innovations as MIRVs (Multiple independently targetable reentry vehicles) which could launch multiple warheads from a single missile. The primary weakness of the ICBM's was the vulnerability of the silos themselves. Theoretically, a first strike by either side could wipe out a significant portion of the other side's ICBM capability.

The second leg of the nuclear triad was provided by the Air Force, specifically in these years the B52. The B52 had the advantage of greater flexibility and could deliver

significant payloads, although as the unfortunate Francis Gary Powers would demonstrate when his seemingly invulnerable U2 spy plane was shot down over the Soviet Union in 1960, strategic bombers were far from secure in enemy airspace.[20]

The final, and in the context of the time the least vulnerable, leg of the triad were the SLBM's (submarine launched ballistic missiles). In the technology of the time, submarines could get close to the target and launch multiple warheads, giving the enemy virtually no reaction time to initiate countermeasures. The weakness of the SLBM's was the massive cost of nuclear submarines capable of operating without detection. There simply were not enough submarines to significantly tip the nuclear balance of power. Today there is a significant threat of space based ballistic missiles. In the Cold War however, these were the stuff of cheesy science fiction movies.[21]

The nuclear triad boasted tremendous destructive potential, but nuclear planners by their very nature were forced to focus more on vulnerabilities than capabilities. Out of this, the MAD men as they came to be called, understood the logic of the MAD doctrine centered on the necessity to launch everything at their disposal at once, preferably as a first strike but failing that at least you used the window of opportunity to launch everything in the arsenal from the first detection of incoming missiles to the time when they would impact and destroy significant portions of the triad on the ground.

This window of opportunity was obviously a key point. With the technology of the 1950s and early 1960s, Soviet ICBM's could enter American airspace over Alaska,[22] giving the American president a window of roughly 20 minutes to authorize countermeasures. This was precisely why the Cuban missile crisis of 1962 brought the two sides closer to nuclear war then they would ever again come. Missiles launched from Cuba would reduce the window of opportunity from 20 minutes to roughly 7 minutes, with catastrophic consequences for the United States.[23]

While popularly known as Mutually Assured Destruction, policy makers in Washington were acutely aware that MAD made for exceedingly poor public relations.[24] In 1953, the Eisenhower administration officially adopted a policy which was officially name Massive Retaliation. Massive Retaliation was in fact MAD, but with somewhat greater flexibility in that it had two variants, Counterforce which targeted military assets and Countercity which was aimed at civilian populations. From this emerged the Single Integrated Operational Plan (SIOP), which in 1960 became the first comprehensive American nuclear doctrine. It went into effect in 1961 but would not be in effect long.[25]

Flexible Response: Making nuclear warfare winnable?

The election of John F. Kennedy in 1960 brought 'the best and brightest' to Washington, in an atmosphere popularly dubbed Camelot.[26] Robert S. McNamara, a systems engineer by training who had served under Curtis LeMay in the War, became Secretary of Defense. He reacted to the SIOP plan with "disgust."[27] There simply had to be better options than the

complete destruction of the world. The logic of what emerged as flexible response was a considerable change to the MAD assumption. What had made Cold War deterrence possible was the shared perception that a nuclear war was not winnable. Flexible response by contrast, allowed for pauses which would give policymakers a chance to hold a limited nuclear exchange. More explicitly, by expanding and diversifying targets, the doctrine held out the possibility that a nuclear war was not only survivable, but very possibly winnable.[28]

Flexible response was primarily a conventional doctrine which posited asymmetrical responses to Soviet aggression. American response to such aggression could therefore be exercised at a time and place of America's choosing. This kind of asymmetric response could now be applied to nuclear policy through the introduction of tactical nuclear weapons which could be deployed on the battlefield without necessarily triggering a full scale nuclear war. In practice what this meant was that a limited nuclear exchange on the battlefield level would take place on European soil in response to Soviet expansion without incurring damage in Russia or the United States. Needless to say, NATO nations we're less than enthusiastic about the policy.[29]

Moreover, the much-enriched menu of targeting options meant that even an intercontinental exchange could be managed given rational actors on both sides who would see it in their interest to negotiate, stopping the exchange before damage became apocalypse. In effect, this lowered the barriers to nuclear war that had been erected by the seeming mad men of MAD. Fortunately, rationality prevailed. Direct confrontation between the US and the USSR was avoided throughout the Cold War Era, allowing actual war fighting to take place only on the peripheries. Thus, The US engaged against Soviet proxies in Korea and Vietnam while the USSR plunged into the abyss in Afghanistan. More commonly, one side's proxies fought the other side's proxies without involving a direct confrontation between East and West.

Cold War Arms Control

Arms control was a Beltway buzzword in the age of Mutually Assured Destruction; a concept that was more the stuff of propaganda than policy. Given the mirror imaging perceptions of the other and the 'use 'em or lose 'em' realities of first-strike destruction of either side's retaliatory capacity, there seemed no alternative to the open-ended acquisition of nuclear weapons, especially of ICBMs. Silos sprouted like mushrooms in a forest after a heavy rain and while actual missile production lagged far behind the construction of silos. Both sides created innovative underground railroads to transport actual warheads to different locations. Indeed, the Soviets went one better by filling their empty silos with paper mâché and wooden facsimiles of missiles, giving American air and satellite reconnaissance the impression that Soviet capabilities were far greater than the reality, further driving American missile production at a pace that the Soviets were unable economically or technologically to match.[30] This was a perfect metaphor for the nuclear

logic of the Cold War—a brilliant feint within a feint that was ultimately self-destructive. Such was the logic of the Cold War.

Even for the United States, the pace of nuclear production in the MAD era could not be sustained indefinitely. But it was the relentless advances in technology, coupled with the near-death showdown of the Cuban Missile Crisis in 1962, that brought both sides to the negotiating table. The first fruit of the process was the 1963 Test Ban Treaty which banned atmospheric, underwater and outer space-based testing and restricted underground testing.[31] This was followed after nine years of negotiation with the Treaty on the Non-proliferation of Nuclear Weapons in 1968.

The era of Détente under the leadership of Richard Nixon in the US and Leonid Brezhnev in the USSR was the most productive period for arms control treaties. As CFR describes it:

> The late 1960s and early 1970s see a general thawing of U.S.-Soviet relations, ushering in a hopeful era of nuclear arms control, which becomes most apparent in the Strategic Arms Limitation Talks, or SALT. The two sides forge a pair of ground-breaking agreements in 1972: the Anti-Ballistic Missile (ABM) Treaty limits the countries' deployment of missile defense systems to their national capital and one ICBM site, and SALT I, which restricts their number of nuclear missile silos and submarine-launched missile tubes for a five-year period. SALT I does not address strategic bombers or warhead arsenals.[32]

1979 was both the high-water mark of the arms control process and with the Soviet invasion of Afghanistan that same year its functional end. SALT II however was an impressive document, further limiting nuclear weapons and launch platforms, including strategic bombers, while imposing new notification requirements and instituting new testing bans.

Conclusion

Nuclear planning policy throughout the Cold War was less about targeting then deterrence. The overall goal of both sides was to avoid nuclear war at all cost, and in this both sides were successful. Like nuclear planning policy, the strategies of containment would change over time. And like nuclear planning policy, containment was largely successful with regime changes on the periphery having little effect in the centre of the East/ West confrontation in Europe.[33]

Like the strategies of containment, the Cold War era arms control agreements, beginning with the Test Ban Treaty of 1963 and culminating with SALT II in 1979, were successful. Neither side expressed any public grievance about serious breaches of the treaties and, in the last analysis, the fact that nuclear conflict did not take place was the ultimate proof of the effectiveness of the arms control process.

Today, the environment is infinitely more complex due to technological innovation and nuclear proliferation. The Cold War was a simpler time in which the US and the USSR held the overwhelming nuclear balance of power, despite the emergence of smaller nations which had developed nuclear weapons, but had only limited regional delivery capabilities. Deterrence held and the world survived. In this, both MAD and flexible response were successful, with success being measured by the fact that neither doctrine was ever tested. Let us next examine the more complex nuclear reality the world now confronts.

Part 2 Russia's nuclear doctrine after 1994 and the evolution of Cold War 2.0

In an interview at the millennium published in *Izvestia*, Nikolai Patrushev, secretary of the Security Council of Russia said that in situations critical to national security, a preventive nuclear strike against an aggressor could not be excluded.[34] Since then, Russian foreign policy has undergone some significant changes, but the question of nuclear weapons remains a key factor in its relations with the West. As the war in Ukraine escalated in 2022, these tensions gave rise to speculation about whether Russian nuclear force would be used in the conflict. Even though several one-sided accounts gained traction in the Western media, the issue is complex. To gain a more objective perspective, aspects of Russian strategic thought, worldview, and nuclear doctrine must be considered.

This section of the report addresses three key characteristics of the Russian problem. First, we examine the development of the Russian worldview after the emergence of the Putin regime and pay attention to the evolution of core ideological concepts. Subsequently, we examine the elements of Russian nuclear doctrine, based on available open source materials. Lastly, we offer a brief outlook on the invasion of Ukraine from a nuclear perspective and offer a brief risk assessment of the conflict.

Russian Strategic Thought in the Modern World

For an examination of Russian strategic thinking, the most useful resources are the open-source Russian documents released over the past two decades. Analyzing these documents reveals three related developments in Russian strategic thinking. These are: the Kremlin's viewpoint on the international system; Russia perception of its place within that system; and the main threats and challenges the Russian Federation considers it confronts. The documents reflect the Kremlin's strategic thought during the 21st century may be divided into three chronological periods dating from 2000,[35] 2008-2010,[36] and documents dating from 2014-2016.[37]

Moscow's worldview has been determined by its geopolitical strength and capability. At the millennium, Russia faced a series of domestic and external crises. After his resignation in 1999, President Yeltsin left behind a struggling economy and a suffering society further tormented by the burden of the first Chechnya conflict and the negative trend in its relations with the West. His successor, Vladimir Putin needed to 're-establish' the state to secure his presidential power which led to two main initiatives in the 2000s: internal stabilization and fluctuating external relations with its near abroad.

The Kremlin viewed these years of the first decade of the twenty first century part of an ambiguous transitional period. After the collapse of a bipolar world order, Russia under Putin came to resist a western- or US-led unipolar, liberal institutional world order. The denial of this liberal order led to the perception that there was an evolving struggle between the interests of states fighting for a multipolar world (of which Russia is an important part) and that of the West pursuing an end of history global hegemony.

In Putin's perception, the post-Cold war world is characterized by constant competition. Russia has to maintain its great power status that is not only inherited from the former Soviet Union but is predestined for the Russian nation. This idea of a distinctive historical mission aligns with a new emphasis on Russian religious orthodoxy and the *Katechon* narrative "where Russia is seen as a 'shield'... protecting the world from the apocalyptic forces of chaos".[38]

The Federation's great power status, after 2000, was manifested mainly in its participation in international organizations, particularly its permanent membership in the United Nations Security Council. Its UNSC role guarantees the preservation of Moscow's great power position, and it considers the importance of international law and the UN (as its coordinating institution) as vehicles for advancing Russian influence.

As for domestic affairs, Putin envisaged his regime announcing the birth of a new era characterized by two determining concerns: the establishment of social and economic stability and the maintenance of regime security. The connection between them form the new Russian social contract, the main characteristic of which – according to Makarkin and Oppenheimer[39] – is that "Loyalty is accorded to the powers-that-be partly from fear of repression, but also in return for new opportunities of advancement—whether resulting from social upheaval or from educational expansion—and for modest improvements in living standards.".

In this context the liberal world order poses several threats to the Federation, both from beyond and within its borders. Among the external risks, western alliances, such as a NATO that expanded Eastward after 1994 threatens Russian security. Despite the opposition to the western alliance, the main concept is clear, Moscow fears everyone who challenges its self-perceived role on the geopolitical stage. By the end of the decade, a new climate of change affected Russian strategic thought. Putin's first presidency had strengthened the regime and brought a turning point in Russian relations with the West in 2007 with the President's speech[40] at the Munich Security Conference. The newly assertive foreign policy approach assumed practical fom in the Russo-Georgian War of 2008.

The security documents released after 2008 demonstrated that the new presidential orders explicitly considered the period transitional, and expressed a Russian version of multilateralism. This Kremlin version of multipolarity is based on the idea of civilizational divisions. The 2008-2010 documents claimed that the world was characterized by "the competition between value systems and development models". This concept aligned with Samuel Huntington's theory of the clash of civilizations, which gained increasing traction in both Moscow and Beijing.[41]

Russia continued to see itself as a great power complemented by its 'protector of international law' role. The latter emphasizes the right to self-defense and humanitarian intervention to protect Russian populations in its near abroad outside the official state borders. This elucidates the importance of the references to certain 'countries adjacent

to Russia' which foreshadows the re-emergence of 'spheres of influence' thinking in Russian strategic thought.

Regarding threats, the 2008-2010 documents also explicitly mention NATO as a danger to Russia's strategic integrity. The cases of Ukraine and Georgia as potential regions of NATO expansion are specifically highlighted. This is unsurprising considering the Bucharest NATO Summit in 2008 which welcomed 'Ukraine's and Georgia 's Euro-Atlantic aspirations for membership in NATO'.[42] The Kremlin also cites George Kennan's Cold War 'containment doctrine'[43] as a threat coming from the West, putting Russia's great power status in danger, which reinforced Moscow's need to retain its 'inherited' historical role.

Official documents from the 2014-16 period further evince a growing anti-western sensibility in Russian elite policy circles. Russian geopolitical thinking increasingly focuses upon an emerging polycentric world order, replacing the previous transitional period in world politics. The emergence of this order, according to the Kremlin, will see a diminution of the West's global influence, and the development of alternative power centers.

Among these rising contenders as alternative centers, Russia considers itself a dominant player reflecting its military status and UNSC membership. Also, the civilizational theory remains prominent as there is a continuing emphasis on Russian Orthodoxy as a source of spiritual, politically religious authority.

NATO remains the Russian Federation's main security threat through its attempt to 'contain' Russia. Internally, regime security also persists as a fundamental concern. Policy documents in this period justify Russia's intervention in countries within its sphere of influence. For instance, in connection with Ukraine, the presence of 'chemical laboratories' and the rise of a Nazi 'radical far-right', first articulated in 2008, justify Russian intervention. Russian policy documents from 2000-2016 show a gradual, but distinct transformation in strategic thought, most particularly a radicalization of Russian anti-western thinking. The concepts of civilization clash, distinct 'spheres of influence', and Russia's 'spiritual' role in world politics seek to reinforce Russia's self-perception as a 'great power'. Moscow demands the world's attention. What we shall next consider is what does this ideological reconfiguration mean for the Kremlin's nuclear strategy?

The core elements of Russian Nuclear Strategy

As the previous analysis has shown, the Russian Federation still perceives itself as a great power, which necessarily requires it to maintain its nuclear role. The core concept behind Moscow's current nuclear thinking is strategic deterrence.[44] During all three periods since 2000, strategic and non-strategic weapons are mentioned as key factors in deterring adversaries from a nuclear or – what is more interesting – a conventional attack. The latter is linked to a key doctrine of the authoritarian nature of the Russian system of government, which is the preservation of regime security at all costs. Apart from the

conditions that may enable the implementation of Moscow's nuclear forces, the element of willingness to reduce nuclear capabilities must be highlighted.

Official documents – especially those of the 2000s – explicitly mention the fact that the Kremlin is reluctant to engage in a post-bipolar world arms race. To understand the role nuclear weapons play in the Russian strategic imagination, it is necessary to understand the changes this imagination has undergone since the collapse of the Soviet Union. According to former Russian Ministry of Foreign Relations officer, Nikolai Sokov, [45] the implementation of nuclear forces shifted after 2008 from their use in a global war to their application in a regional conflict. The ministry distinguished the role of these weapons based on the level of application. In the case of a global war, the key role of nuclear force remained its deterrent effect. By contrast in a regional conflict, the Federation could strive for de-escalation – using the nuclear threat in a preventive manner. This transformation in doctrine was confirmed by former State Duma member and political scientist Alexei Arbatov's 2017 study, [46] Whilst the former Soviet Union focused on delivering maximum destructive power against an opponent, modern Russian military strategists recognized that a full-scale nuclear war could not be won due to arms control initiatives.

The idea of using nuclear weapons in regional conflicts is logically aligned with the worldview demonstrated in Russia's official strategic documents since 2000. The Kremlin's doctrine states that the escalation of regional conflicts poses a threat to the Federation. These clashes – which may include using proxies – uncannily resemble conflicts where the Cold War became hot, as superpowers asserted their presence through local conflicts with global implications. Consequently, the idea of a 'New Cold War' can be derived from the evolving Kremlin worldview, and Russia can be expected to act accordingly. In a 2015 interview, Russian President Vladimir Putin said that "Fifty years ago, the streets of Leningrad taught me one thing: If a fight's inevitable, you must strike first".[47] Although Putin's remarks referred to the Syrian war at the time, it captures the central character of Russia's nuclear strateg, namely, the 'escalate to de-escalate' theory.

According to retired brigadier general of the U.S. Army and former U.S. defense attaché to Russia, Kevin Reynolds, [48] the theory was first described in 2015 by Adm. James Winnefeld, vice chairman of the Joint Chiefs of Staff, in his testimony to the House Committee on Armed Forces. In 2018, the U.S. Ministry of Defense, *Nuclear Posture Review* clarified this evolving Russian posture. The review observed that "While nuclear weapons play a deterrent role in both Russian and Chinese strategy, Russia may also rely on threats of limited nuclear first use, or actual first use, to coerce us, our allies, and partners into terminating a conflict on terms favorable to Russia."

Despite several Russian declarations denying the existence of a 'first use' principle, including Vladimir Putin stating[49] that Russian doctrine only contains the concept of a "retaliatory strike", the Kremlin's nuclear strategy document (2020) declares that Moscow maintains the right to use nuclear weapons in case of a conventional attack, "when the very existence of the state is in jeopardy." [50]

Norwegian international relations scholar, Katarzyna Zysk maintains that preventive strikes are very much present in current Russian nuclear strategy. According to Zysk, the basic logic of this theory is that "Russia reserves an option of limited nuclear use at a scale that would aim to avoid escalation in order to compel the adversary to refrain from further action and back off." This fits the pattern of Russian operations observed in Georgia and Ukraine where the Federation sought to take the 'strategic initiative'.[51] Chekinov and Bogdanov consider this practice a characteristic of 'new-generation warfare'. [52]

Zysk's analysis also identifies another unanswered question in Russian nuclear strategy: the relationship between conventional and nuclear weapons. In the bipolar world order, the conventional inferiority thesis applied to the attitude of the Soviet Union. Nuclear forces provided "a more attractive deterrent option than conventional weapons". This was also confirmed by the agreements in the SORT (2002) and New START (2011) treaties, which only promised the reduction of Russian nuclear weapons if the U.S. was willing to curtail its conventional ones.[53]

The unexpectedly weak performance of Russian forces after 2008 gave momentum to the modernization of Moscow's armed forces. Since then, the development of conventional and nuclear weaponry has proceeded in parallel, which is also demonstrated in military exercises where Russian commanders simulate war games in which both types of force are implemented as complementary.

Ultimately, the question remains whether the Kremlin contemplates using its nuclear forces for preventive action and in what scenarios it would be willing to do so. Referring back to the official strategic documents, these declare that Moscow will use its capabilities in case of a nuclear strike from an adversary, or a conventional attack threatening the existence of the state. On this evidence it is plausible to conclude that Russia would not use nuclear weapons in regional wars that did not threaten the regime's security. At the same time, the under performance of the Russian military in Ukraine must be considered in the context of whether the failure to reach the political goals set by the Kremlin enhances the risk of nuclear escalation in 2023.

Nuclear Prospects of the Russo-Ukrainian War in 2023

The escalation of the Russo-Ukrainian War marked the beginning of a new geopolitical era. The Russian invasion is the largest armed conflict to be staged on the European continent since World War II.[54]

From the Russian perspective, the offensive against Ukraine has become the defining foreign policy initiative and military operation undertaken by the Putin regime. The United Kingdom's Defense Ministry claimed in mid-February that Moscow had "deployed nearly its entire army in Ukraine".[55] Additionally, some experts consider the employment of economic sanctions against Russia as the first time that economic warfare has been

tested to this extent in the post-Cold War era .[56] The narratives of Moscow's political elites have also emphasized the importance of the "special military operation" to the security of the Federation, beginning with Putin's speech in February 2022.[57]

Despite the offensive's significance for Russia's future, the Kremlin's armed forces failed to achieve battlefield success. The main political goals – a regime change in Kyiv ("denazification") and the ultimate defeat of the Ukrainian armed forces ("demilitarization") – have not been achieved. Even the attempt to fulfill the modified agenda of conquering the Donetsk and Luhansk oblasts were only partially successful since a part of the former is still under Ukrainian control since the early days of March 2022.[58] In addition to the disappointing performance of their armed forces, Russian decision-makers backed themselves into a corner by the annexation of Kherson, Luhansk, Donetsk, and Zaporozhia oblasts in September 2022[59], which intimated ambitious political and military goals for 2023. From the perspective of nuclear strategy, the main question is whether the regional conflict in Ukraine will reach a point at which it poses a threat to Russian regime security. A brief risk analysis based on Russian statements from the start of the special operation in February 2022 reveals certain trends and patterns in Moscow's rhetoric.

The preparations for nuclear deterrence during the invasion in February had actually begun months earlier, Deputy Foreign Minister Rybakov stated that Russia may deploy "tactical nuclear weapons if NATO does not guarantee an end to its eastward expansion."[60] This was followed by a testing session of Moscow's strategic nuclear forces in February 2022.[61] After February 24, the Russian president ordered nuclear deterrence forces to be placed on high alert[62] to reduce the possibility of Western intervention in the early, and most critical period of the Kremlin's blitzkrieg plan. Following the failure of Russia's initial efforts to seize Kyiv, nuclear narratives again took the stage in statements coming from Moscow. On March 26, former president and deputy chairman of the Security Council of Russia, Dmitry Medvedev, stated that Russia was "ready to give a worthy response to any infringement on our country, or its independence,."[63] Medvedev referenced the two possible scenarios for the implementation of nuclear weapons namely a nuclear strike by an enemy or an assault on the integrity of the regime. Meanwhile, in an interview two days later, Kremlin spokesperson Dmitry Peskov said that any outcome of the "special military operation" did not suggest any necessity to use Russian nuclear weapons.[64] Subsequently, after Russia altered its political agenda and emphasized its claim to the Donbas, following the Russian defeat in the battle of Kyiv in April, the same ambiguity in Russian statements about the use of nuclear forces could once again be observed. On April 25, Foreign Minister Lavrov stated in an interview that the danger of a nuclear war was serious and real, even though he did not "want to elevate those risks artificially."[65] Four days later, Vladimir Yermakov, the head of nuclear non-proliferation in the Foreign Ministry, addressed these tensions by saying that the risks of a nuclear war "must be kept to a minimum."[66] This was followed by Alexander Lukashenko's statement denying the possibility of nuclear weapons usage.[67]

Following the Ukrainian counter-offensive in September 2022, where Kyiv eventually gained a strategic advantage in the Kharkiv oblast, contradictory Russian statements appeared once more.In July 2022, Medvedev had foretold "a judgment day response"[68], while a few weeks later senior diplomat Alexander Trofimov stated at a conference that speculations about the usage of Russian nuclear weapons were "utterly unfounded" and "detached from reality."[69] When the success of the Ukrainian military became evident, Putin announced partial mobilization, and on the same day, the president expatiated on the possibility of using all available weapon systems.[70] Days later, Evgeny Buzhinsky, a former top arms control negotiator and vice-president of the government-funded Russian International Affairs Council, denied the allegations that Russia would implement its nuclear forces in Ukraine.[71]

During the last months of 2022, the intensity of the nuclear narrative dissipated somewhat. On October 27, Putin denied any intention of employing nuclear force in Ukraine.[72] At the end of November, Lavrov drew attention to the necessity of avoiding clashes between nuclear powers;[73] and on December 7, 2022, Putin again rejected the idea of Russian first use of nuclear weapons.[74] Despite the apparent moderation in Russian nuclear rhetoric, in his address to the Federal Assembly on February 21, 2023, the president nevertheless announced that Russia would suspend its participation in the New START Treaty.[75] The declaration didn't come as a complete surprise given that the Federation refused to allow American experts to conduct inspections in August 2022, after they had been put on hold since the Covid pandemic of 2020. Considering the previously observed trends, the Kremlin's step fits into the pattern of nuclear narratives throughout the 2022 escalation. Considering the recently announced decisions of Western countries to provide Ukraine with additional battlefield equipment, including Leopard-2 armored combat vehicles, an increase in the intensity of statements aimed at the enhancement of nuclear deterrence might be anticipated.

On the other hand, the negative implications of the suspension of the START treaty and the subsequent decision in March to deploy nuclear weapons in Belarus draws attention to an alarming trend that has been unfolding during the last year of the war, namely that the two largest nuclear powers have fewer and fewer platforms for maintaining dialogue. To sum up, the chance of a nuclear war breaking out in Ukraine is limited– assuming the battlefield patterns remain the same. The latest statements suggest that the Kremlin is certain about its ability to resolve the situation with its conventional forces. Nuclear narratives, and the threat of nuclear blackmail, however, will continue to play a significant role in Moscow's strategic discourse and their intensity will reflect what happens on the battlefield. This is not the case in the less obvious case of nuclear escalation across what Nicholas Spykman termed the Rimland of the world continent, to which we next turn.[76]

Part 3 Nuclear Weapon Systems and the Problem of Identification in the post-Cold War World

Historically, as we have shown, international stability in the field of nuclear competition requires transparency. If the actions of nuclear powers are clearly signaled or can be discerned, the coercive threat may be kept within limits. Absent, it evinces a general sense of unease and creates a nuclear dilemma.

In the case of weapons systems, stability requires the clear delineation of nuclear and non-nuclear platforms. This problem was apparent from the nuclear outset. After a slow start, the delivery systems and warheads of the two great nuclear powers proliferated to almost every service and organization. The smallest U.S. warhead, the "Davy Crockett" was almost a company-level support weapon.[77] Nuclear artillery munitions, torpedoes, anti-submarine bombs, even air-air rockets were developed, alongside the bigger gravity bombs, ballistic missiles and cruise missiles. Eventually, some weapon systems emerged as core elements in the nuclear triad. Silo-based intercontinental ballistic missiles, and ballistic-missile equipped submarines constituted exclusively nuclear-armed systems whilst long-range strategic bombers possessed a dual use. Yet despite the differentiation between nuclear-armed and conventional air squadrons, the presence of strategic bombers in any area of the world generally represented a strategic threat with nuclear implications. This problem of differentiation increased in severity as emerging powers developed nuclear capacities. The Israeli nuclear arsenal cannot be verified. Its Jericho missiles are generally believed to be of nuclear use, but their air force cannot be differentiated into conventional and non-conventional elements. Thus, the Israeli nuclear threat cannot be discerned by the stance of their air force, only the actual strategic situation.[78]

When India and Pakistan crossed the nuclear threshold in 1998, the problem of identification arose once more. Their air forces also possessed a dual role.[79] However, the bulk of their nuclear capabilities are ballistic missiles, which have a clearly defined nuclear role. China has a similar posture: some bombers have nuclear roles, but the preponderance of its warheads are ballistic missiles.[80] The greatest difficulty in differentiating between nuclear and non-nuclear weapons, however, has arisen with the evolution of advanced underwater platforms. These are the most volatile elements in a nuclear force. Submarines are generally deployed on "deterrence patrols." They are hard to locate and can launch missiles from unexpected sites. Thus, new submarines require verification to establish a state's nuclear posture. The air forces of most nations, by contrast, do not frequently change bases or operational theaters.

Submarines, however, are different. The "old powers" generally deploy their nuclear weapons on large nuclear-propelled submarines. These have unmistakable sound signatures. By contrast the proliferation of nuclear capacities to states like India, Pakistan, Israel North Korea and China did not follow this path. This is because nuclear submarines are enormously complex and expensive. Since 2000, Israel is suspected to deploy cruise missiles with nuclear warheads on submarines. Pakistan similarly aspires to have nuclear-

tipped cruise missiles carried on its submarines.[81] Both these systems are deployed on small diesel-electric submarines. Moreover, the later models of the Israel Dolphin-class and Pakistan's new Chinese-made submarines are equipped with air-independent propulsion systems. These are alternative "engines" powered by a chemical fuel. Their propulsion consequently emits very little sound.[82]

Thus arises a problem of verification regarding the nuclear intentions of these new nuclear states. These submarines are general-purpose vessels, tasked with patrolling waters in the proximity of their homelands, attacking enemy submarines and surface vessels in times of war. Their patrols are generally peaceful and defensive. However, if they carry cruise missiles with nuclear warheads, the picture changes. These states and the sea maneuvers of their navies would be viewed as aggressive. Submarine patrols could be transformed into a threat similar to an "elephant walk" by U.S. strategic bombers. In this way, the danger of nuclear war increases, as the participants face the dilemma of an unknown, but potentially existential threat.

It is not only emerging nuclear powers that mix conventional and nuclear weaponry. The United States converted an Ohio-class strategic-role, ballistic-missile submarine (SSBN) into a cruise-missile launcher submarine (SSGN), to have a transportable, stealthy and capable platform to carry out operational-level strikes.[83] The Russian Navy followed, building dedicated SSGNs in 2020.[84] The Chinese interpreted the American move as the deployment of a new nuclear weapons class. They understood the hulls of the Ohio-class to be nuclear weapons systems. Consequently, China plans to equip their originally conventionally armed Type 093 submarines with CJ-10 nuclear-tipped cruise missiles,[85] in the process blurring the lines between their nuclear and non-nuclear arsenals and in the process accelerating the nuclear arms race.

Ironically today's uncertain geopolitical climate has led nuclear actors to recreate the ambivalent condition of the 1950s. The current complex situation entails a new mixture of underwater platform threats, alongside the continuing need for clear boundaries to nuclear coercion and competition on land. This has accelerated arms races, as a variety of weapon systems can now serve a dual nuclear role, especially in the field of military aviation and underwater platforms.

Although Ukraine represents a clear and present danger, the development of an Indo-Pacific naval arms race as a result of conflict over the South China Sea has not only accelerated deployment of nuclear weapons at sea, but also the growing ambiguity of boundaries between conventional and nuclear-oriented arsenals. In other words, the amplification of the nuclear threat is by no means confined to Central Europe. We shall first examine the case of Indo-Pacific escalation before considering whether the Ukraine war will turn into a limited nuclear one.

Underwater Platforms and the Indo-Pacific Nuclear Arms Race

The proliferation of nuclear weapons outside the Euro-Atlantic world after 1990 was followed closely upon the expansion of the use of underwater nuclear platforms. Aside from the U.S., the UK, France and Russia, five more states are suspected to have or have acquired the capability of deploying nuclear-tipped missiles from underwater platforms. They are all located on the Eurasian Rimland: going from Northeast to the West, they are North Korea, China, India, Pakistan, Iran and Israel. These weapon systems reflect and reinforce the geopolitical dilemmas engulfing the Indo-Pacific region. In this section of the report, we will focus on the China-India-Pakistan group. The other states, while important, have limited submarine forces, and they are much less interconnected in their strategic thinking than the aforementioned three.

While there is a variety of different nuclear weapon systems demonstrating the emergence of a nuclear arms race around the Eurasian Rimland, the significance of the nuclear submarine underwater platform stands out. In the blossoming "nuclear triads" of China, India and Pakistan we can see submarines pushing the nuclear race. When the Cold War ended in 1991, there was a single nuclear-powered, ballistic missile-equipped submarine (SSBN) in the navies of the three rimland states. This was the sole member of the Chinese Type 092 *Xia*-class. It was only semi-operational and had never conducted a deterrence patrol. By 2023, the rimland states together possessed 7 fully operational SSBNs: one Indian *INS Arihant* and six Chinese (Type 094/094A *Jin-class*. These SSBNs are capable of ranges far in excess of the 1700-km reached by the *Xia* in 1990.[86]

Today Pakistan seeks to equip five Agosta-class submarines with Babur 3 nuclear-capable cruise missiles and acquire eight Chinese-constructed Hangor-class vessels. India is in the process of outfitting or constructing three more SSBNs, while both India and China are planning more advanced and heavily-armed class (S5 and Type 096 submarines).[87]These developments are pregnant with consequences for the nuclear arms and defense policies of all states involved in the Indo-Pacific.

What are the strategic implications and collateral liabilities of nuclear-armed underwater platforms? A submarine brings a platform to the strategic balance that is hard to detect, highly maneuverable and can attack from unpredictable directions. Missile defense systems could be potentially overwhelmed with re-entry vehicles arriving from several different locations, as the land-based systems will fire from its home ground, while a submarine can use various seabed positions. Nuclear submarines add a new meaning to strategic depth. They could overwhelm enemies not only positionally, but in defense planning too. Generally, the land-based nuclear capabilities can be targeted with conventional or nuclear long-range munitions. A nuclear-capable submarine needs a completely different set of counterforce assets to deal with it - a navy capable of detecting and striking a submarine that spends weeks maneuvering beneath ocean surface. Ultimately, a nuclear-capable submarine is a symbol of great technical, financial and industrial capability, especially an SSBN. In the Indo-Pacific context of the postcolonial

nations of the Eurasian Rimland, it is very potent strategic signifier to build or otherwise acquire an underwater nuclear platform.

However, a nuclear submarine is also a liability. It means a more aggressive nuclear posture. A submarine on deterrent patrol will be assumed to be armed with nuclear warheads, which was not the case in the Indo-Pacific at the millennium. Underwater platforms also pose problems of communication in wartime. They require a safe communication system, or the commander has to possess the right to decide whether to launch warheads. In the end, there is the problem of identification. An enemy vessel conducting an anti-submarine patrol cannot necessarily distinguish between a nuclear and a conventionally armed submarine. This could damage nuclear deterrent capabilities and trigger war. These factors make nuclear-armed submarines potential liabilities. The history of the proliferation of these platforms across the Indian and Pacific Oceans highlights several drivers of capability proliferation beyond Europe and North America. It is a story of arms trade policies, the crumbling of non-proliferation regimes and snowballing competition.

The stages of submarine proliferation in the region and possible future developments: The 1990s: Stoking the Fire

The first decade after the Cold War was a period of turmoil for South Asian nuclear policy. Two factors contributed to the Eurasian rimland escalation: the changed arms trade patterns of the West and of the former Soviet Union. With the end of the Cold War the arms trade was disrupted as superpower subsidies for arms recipients evaporated.[88] Political restrictions eased, and new alliances were sought, beyond Cold War limits.

The Russian rapprochement with China in 1992 opened a new arms trade venue for submarine technology.[89] China not only bought several capital ships from the former superpower, but also a lot of expertise, and blueprints for nuclear submarines. The Type 092 *Xia*-class SSBN was discontinued. In 1994, the Chinese started to build a totally new SSN class, the Type 093. They reportedly used Russian expertise and the design of the Victor III class Soviet SSN. This new Chinese boat class, in turn, served as the basis of the later *Jin*-class Chinese SSBN.[90] So we can see that the development of the present-day naval nuclear progeny of China clambered out of a post-Soviet cradle.

India also received similar help from post-Soviet Russia. Their military relationship was already decades old. India had worked on a nuclear submarine since the 1970s.[91] It trained several nuclear experts in the Soviet Union, that helped in nuclear power plant design.[92] It was, at the time, unclear whether the Indian submarine would be SSBN class.[93] However, with the fall of the Soviet Union, India acquired a Soviet, Charlie I-class SSN, which they leased until 1993, and bought its blueprint.[94] This was India's first real test of a nuclear-powered submarine.[95]

At the millennium, it was clear that the newly gained expertise would be used for a strategic-role submarine: India's draft nuclear doctrine of 1999 stated that it would develop a "triad of nuclear weapons", including a sea-based platform.[96] Thus, post-Soviet Russian nuclear and naval exports contributed to the rise of later nuclear submarine fleets across the Rimland. At the millennium, however, very little was discernible. The Chinese Type 094 class was still a rumor. The Indian ATV construction had begun, but its intended power plant was far from ready to be implemented into its hull.[97] Russian nuclear proliferation efforts thus had a slow-burn across the Indo-Pacific.

But there were also more obvious developments in proliferation. They came from the West. NATO-manufacturers lost markets with the collapse of Cold War procurement policies. It was no great surprise, then, when in 2000 Pakistan secured diesel-electric submarines in the shape of three Agosta 90-class submarines from France, always keen to maintain its shipbuilding industry with new export procurements.

Pakistan's submarine deal had a questionable background. The French lobbied heavily in Islamabad, and allegedly distributed bribes to Pakistani government officials.[98] By these means, Pakistan acquired a European diesel-electric class submarine instead of a Type 091 Chinese SSN. French largesse washed the Chinese project away. This, in fact, hindered Pakistan from training with and possibly gathering technological information on a nuclear-propelled vessel. This explains why the Pakistani nuclear arsenal does not yet have a serious SSBN program. The missile-capability of the *Agosta*-class nevertheless gave them a nuclear strike capability, if they managed to develop suitable missiles for the platform. At the turn of the millennium, however, this just seemed a possible area of development for Pakistan's nuclear strategy.[99]

The armament processes of the 1990s did not, then, herald the immediate appearance of nuclear-armed submarine platforms across the Rimland. Russia spread submarine blueprints and expertise which allowed the Chinese to reboot and the Indians to get a head start in nuclear submarine technology,while France armed Pakistan with potential platforms for nuclear-tipped missiles. The big question for the first decade of the 21st century was whether a new naval nuclear race would be built on these technical foundations.

The 2000s: In Search of Credible Deterrence

The crumbling of the international non-proliferation regimes, the rise of more aggressive nuclear doctrines, and the asymmetric warfare environment of the Global War on Terror all contributed to the emergence of Cold War 2.0 in the Indo- Pacific. A more aggressive nuclear posture was already emerging in the 1990s. Both China and India adopted No First Use nuclear guidelines,[100] and pursued "minimum deterrence". This doctrine meant that nuclear arsenals would not be kept in a launch-on-warning state. Warheads would be stored separately and even disassembled.

The Chinese generally kept to these principles. But some experts in the 1990s suggested that it was moving toward "credible minimum deterrence".[101] Chinese strategic thinking became increasingly conscious that U.S. nuclear plans counted the Chinese arsenal as an easily neutralized one with its few dozen liquid-fueled, statically stored missiles.[102] The "no-first use" concept began to mutate. A strike warranting a nuclear answer was conceptually stretched to include a strike on critical infrastructure, strategic forces, or any installation that is essential for the survival of a nuclear second-strike capability.

Sinologist Alastair Johnston wrote in 1996 that the collapse of arms control treaties would also push China into a nuclear arms race. The most important was the 1972 Anti-Ballistic Missile ABM treaty, which was a Cold War-era agreement stabilizing mutually assured destruction between the Soviet Union and the United States. On the 13th of December 2001, the United States announced that it would withdraw from the treaty to build a missile defense system to defend itself against the ballistic capabilities of rogue states. Given the 1990s conventional arms build up, this decision only accelerated the naval nuclear arms race across the Rimland. China expressed its disappointment over the retreat from the ABM treaty, and the PRC's 2010 Defence White Paper described the US missile defense systems as an offensive threat against China.[103] It indicated the decreasing credibility of the minimum deterrence strategy. China's nuclear strategists follow Clausewitz's thinking on war and view nuclear weapons as a political instrument.[104] A nuclear arsenal without credible survival is not a useful political instrument. The most obvious tactic to evade ABM systems with a limited number of warheads are SSBNs, as they offer operating systems from different locations. Indeed, Chinese SSBNs potentially surpass the U.S. missile defenses installed in Japan and South Korea.

Chinese SSBN development reflected the decline of the ABM treaty regime.[105] The development and deployment of the Jin-class SSBNs in the 2000s was the PRC's answer to missile defense systems. By 2010, two boats of the class were in service and two were being built.[106] They were equipped with the 7200-km range Julong-2 missiles,[107] which could reach the United States from the middle of the Pacific Ocean. It was a clear answer to U.S. ABM system development. It also generated new pressures for conflict with the United States.

India, China's premier rival in the Indo=Pacific, followed suit. By 2010, the first of the new Indian SSBNs, INS *Arihant* was launched. Yet its new missiles were still in the development phase, only the 1500-km range "Sagarika" missile was ready to deploy. The pressing need to field a token SSBN was evident from the design of the submarine. It has only 4 vertical launch tubes for the new, K-4 missiles, which could also be outfitted with three-pronged launchers for the "Sagarika"- making the submarine capable of launching 12 shorter-range missiles.[108]

The last nuclear Rimland player was Pakistan, which did not make much effort to develop a submarine-based nuclear platform in the 2000's. But the pressure increased. It began in 1999, when Pakistan's air defense failed to detect a U.S. Navy Tomahawk salvo aimed at Al-Qaeda outposts in Afghanistan.[109] It continued with U.S. special forces incursions

into Pakistani territory. Meanwhile, New Delhi realized after the 2001-2002 crisis that its conventional armed forces did not have much leverage in Pakistan. Subsequently, the Indian General Staff decided to station several attack-ready Indian units near the Pakistani border, so they could take key strategic points instantly, if a crisis occurred.[110] Given its lack of strategic depth, it became imperative for Pakistan to develop a nuclear force that could evade an unconventional or conventional attack aimed at seizing the national warhead stockpile and key launch installations. The May 2011 operation, Neptune Spear, where a U.S. special forces attack to kill Usama bin Laden, took place near a Pakistani nuclear stockpile site, was the tipping point.[111] In 2012, Islamabad announced a "Headquarters Naval Strategic Command" to establish a "second-strike capability" for its nuclear forces.[112]

Indeed, all the Rimland nuclear states entered the 2010s with developing submarine-based capabilities aimed at countering newly perceived threats, either from the US unipolar world order or new, asymmetric, threats. The 2010s accelerated these trends, while also revealing new problems.

2010-2023: Pushing the Rooks

The last decade was the most active in the post-Cold War proliferation of submarine capabilities in the three countries. Following the established capabilities and technological foundations of the 1990s, the pace of the race increased. The Pakistani project announced in 2012 did not remain on paper. Pakistan tested the submarine-launched cruise missile, the Babur 3 on January 9th 2017. Another test followed [113] Meanwhile India commissioned the INS *Arihant* in 2014 and sent her on a deterrence patrol four years later. She is outfitted with short-range "Sagarika" missiles. One of her sister boats, the INS *Arighat* is due to be commissioned, possibly in 2023. The construction of two more similar class submarines is in progress. Meanwhile, China completed its six Jin-class boats, and is preparing the next Type 096 class of nuclear submarines.[114].

All these vessels are retrofitted with new technology. The INS *Arighat* will have 6 vertical launch tubes instead of 4. The last two boats of the Jin-class were classified as Type094A instead of Type094, because they carry the new Julong-3 SLBM, allegedly with a range between targets between 9000 km -12 000 km. India and China also possess second-strike deterrent capabilities, whilst Pakistan is about to achieve it. It seems that they have all reached or are about to reach "minimum credible deterrence" capability.

There comes with this escalation the liabilities of a nuclear naval force. A nuclear-capable submarine can operate in two ways. One is long-range cruises, which can take place across the world's oceans. This demands that the submarine be stealthy or that its navy possesses permanent power-projection capabilities so the submarine can be defended. The Pakistani Agosta-class submarines are not long range as they do not possess the virtually unlimited range of SSBNs. They are bound by their fuel volume. The Indian and Chinese platforms have both the range to get to shores far from their home base. But

they do not possess the stealth. A Jin-class vessel, for example, could be tracked by passive sonar from 50 km away, while U.S. SSNs can track a submarine from a 10-km distance without revealing themselves.[115] This means that they have to be escorted by armed vessels to the open sea. According to one analyst, it would take a third of the Chinese fleet to escort the current Jin-class submarines through these channels.[116]

Of course, in the event of an Indo-Chinese war, the PLA's Julong-2 missiles from their base, Sanya on Hainan Island in the South China Sea could easily cover all of India. The Indians could reach some parts of southeastern China from the Bay of Bengal with its K-4 missile if it ever puts to sea. In the case of war, where India targets China and Chinese missiles are launched at India or US overseas territories and allies, an additional deployment method is possible for SSBNs. This would take the form of naval "bastions", selected areas where SSBNs could be shielded from enemy attack and still launch their missiles. For China, it's bastion is evidently the South China Sea. The SSBN fleet was moved there from their northern bases, for this purpose.[117] The Indian bastion is the much wider Bay of Bengal. Although Chinese ASW ships could potentially reach these waters, they would have to circumnavigate the Pacific to get there undetected, or they would have to navigate the easily controlled choke points of the Sunda or Malacca straits.

In both instances, the problem is the same. The new platforms have to be defended. This means the waters of the bastions have to be patrolled. The Indians have it easier. They share the waters of the Bay with three countries: Bangladesh, Myanmar, and Indonesia. India has a complex relation with Bangladesh, but the ties improved in the last decade indicating that securing the Bay of Bengal is an incentive for India to improve relations with adjacent nations. Myanmar is a Chinese client state but does not possess meaningful naval capabilities.

China's situation is more complex, as their South China Sea border is contested by all ASEAN countries with a shore on that sea as well as Taiwan. To secure their SSBNs, China has laid claims to these waters and aggressively patrols them. This has led to high-stake territorial conflict with their neighbours, notably Vietnam and the Philippines as well as bringing other parties interested in the freedom of the sea lanes into the dispute, notably the US, Australia and Japan. Chinese constructions on atolls and reefs of the sea, amd the creation of artificial islands since 2012 may be traced to the need for a naval bastion for SSBNs.[118]

Not only does this issue strain diplomatic relations, it also stretches budgets. The major expansion of China's fleet can be partly explained by the nuclearization of the sea. Other major armament developments are a direct consequence: the AUKUS Treaty (2022) which includes the construction of Australian SSNs was formed with the intention to enable long-range Australian operations against the Chinese fleet and especially their SSBNs.[119]

The Kim Jong Un issue or what do you do with a problem like Korea?

Of course, not only do submarine platforms exacerbate the nuclear-induced armament race across the Asia Pacific. North Korea (Democratic People's Republic Korea DPRK) has been an ongoing nuclear problem since the six party talks to disarm the regime broke down in 2009. The DPRK has no nuclear-propulsion submarines, nor does it have smaller, cruise-missile capable French submarines. It did however acquire Soviet Golf II-class submarines, that dated from the early 60s, with conventional diesel-electric propulsion.[120] The Russians actually sold the submarines as scrap, so the Russians – at least superficially – did not intend to facilitate technology proliferation. However over the decades, the resourceful North Koreans, managed to construct at least one semi-operational submarine , with an experimental launch tube in use during some of its recent missile tests[121].

This notwithstanding, the DPRK – capability-wise – remains essentially a traditional actor regarding the delivery of nuclear weapons.[122] North Korea's deployment platforms consist primarily of fixed silos and wheel-mobile launch tubes. The DPRK's capricious international behavior means that submarine technology proliferation is – as of 2023 – not the most urgent threat to nuclear strategy in the Asia Pacific. The erratic nature of the Pyongyang regime and its supreme leader's frequent recourse to nuclear threats understandably exercises more international attention than the appearance of new cutting-edge deployment technology in other Rimland states.

At the same time, the DPRK's comminatory behaviour has had the unintended consequence of provoking South Korea (Republic of Korea ROK) to develop strategic weapon platforms and potentially acquire nuclear warheads as well. With the emergence of an existential North Korean nuclear threat, the DPRK is examining the possibility of developing its own nuclear capability via the use of ambiguous underwater platforms. This would raise the density of nuclear weapons in the region, and intensify the need in all neighbouring states to push for technical superiority in their nuclear arsenals.

As the Nuclear Threat Institute observes, the Republic of Korea navy (ROKN) is in the process of adding nine Type 214 (KSS-3) vessels to its fleet. On 14 September 2018, the ROKN launched the first KSS-3 submarine: ROKS Dosahn Ahn Chango. In July 2019, it was reported that the Dosan Ahn Chang-ho started sea trials. The vessel was commissioned on 13 August 2021. The KSS-3 submarine includes many upgrades, such as the capability to carry six vertical-launch tubes. The launch tubes will likely fit cruise missiles and a naval variant of South Korea's Hyunmoo-2B ballistic missile, capable of striking targets within a 500km range.[123] Meanwhile, in April the US sent an Ohio class SSBN to South Korea, thus further reinforcing the underwater platform uncertainty in the Sea of Japan. [124]

The rise of the underwater nuclear platforms of China, India, and Pakistan has therefore transformed the maritime geopolitics of the Indo-Pacific and by extension the world. It evinces a more aggressive policy on all sides, to retain a credible minimum deterrent at sea. The nature of the Rimland means these seas are heavily contested and, since 1941,

have always been troubled by international conflict. Recent developments were exacerbated by unchecked Russian technology-proliferation, aggressive and geopolitics-blind Western arms export policies, asymmetric threats and the crumbling of non-proliferation regimes. The Leviathans are in the sea; the world will have to learn quickly how to live with these new and evolving threats.

Conclusion

As the UK's leading authority on nuclear strategy, Sir Lawrence Freedman observed in 1997, the MAD deterrence regime altered after 1990. "Rather than reinforce power politics as usual," Freedman wrote, post-Cold War "nuclear proliferation in fact confirmed a tendency towards the fragmentation of the international system in which the erstwhile great powers play a reduced role."[125]

There has certainly been a fragmentation of the international system, but nuclear politics have also become far more complex and communication about their deployment of platforms far more ambiguous. As we have shown the neglected proliferation of underwater nuclear platforms has transformed the maritime geopolitics of the Indo-Pacific and by extension the world. The nature of the Rimland of the world continent means the Indian and Pacific oceans are heavily contested and have historically been the subject of international dispute. India, China, North Korea and Pakistan's nuclear ambitions since the end of the Cold War have been exacerbated by the collapse of treaty regimes and a climate of growing mistrust. The proliferation of these platforms across the Indian and Pacific Oceans highlights several drivers of capability proliferation beyond Europe and North America. It is a story of the crumbling of non-proliferation regimes and snowballing competition.

The rise of nuclear Leviathans beneath the sea are complemented by the continuing presence of nuclear Behemoths on the land and in the sky, Even though recent Russian foreign policy decision-making does not suggest that the Kremlin perceives the war in Ukraine as a threat to the regime's security, yet, it is important to keep in mind that Russia's propensity for strategic ambiguity means that no-one knows exactly where the threshold for triggering a nuclear response might lie. At the same time, the emergence of a G2 world preoccupied with security and mistrust only fuels the problem of war Clausewitz first identified of modern states in a condition of international anarchy employing war and even 'limited' nuclear war as a political instrument.[126]

[1] https://www.economist.com/democracy-in-america/2017/01/26/the-doomsday-clock-now-reads-two-and-a-half-minutes-to-midnight?utm_medium=cpc.adword.pd&utm_source=google&ppccampaignID=18156330227&ppcadID=&utm_campaign=a.22brand_pmax&utm_content=conversion.direct-response.anonymous&gclid=CjwKCAiAxvGfBhB-EiwAMPakqsiWTJBBYRtdGBTObffR0gvS2PHNydUr_6e-94faVHVxXv-HmLpYFBoCO28QAvD_BwE&gclsrc=aw.ds

[2] https://www.economist.com/democracy-in-america/2017/01/26/the-doomsday-clock-now-reads-two-and-a-half-minutes-to-midnight?utm_medium=cpc.adword.pd&utm_source=google&ppccampaignID=18156330227&ppcadID=&utm_campaign=a.22brand_pmax&utm_content=conversion.direct-response.anonymous&gclid=CjwKCAiAxvGfBhB-EiwAMPakqsiWTJBBYRtdGBTObffR0gvS2PHNydUr_6e-94faVHVxXv-HmLpYFBoCO28QAvD_BwE&gclsrc=aw.ds

[3] See Herman Kahn *On Thermonuclear War* (Princeton: Princeton University Press, 1960)and Anatol Rappaport Introduction Carl Clausewitz On War (London, Penguin, 1982)P.67

[4] Jeffrey Sachs 'Ending the War in Ukraine' *The Hungarian Conservative* January 2023 https://www.hungarianconservative.com/articles/interview/ending-the-war-in-ukraine-is-up-to-america-jeffrey-d-sachs-to-mandiner/

[5] Andrew Olsen, "Belarus says it will host Russian nuclear weapons" *Reuters* 28 March 2023 https://www.reuters.com/world/europe/belarus-says-it-decided-host-russian-nuclear-weapons-after-nato-pressure-2023-03-28/

[6] Lee Aspin, 'Remarks', National Academy Science Committee on International Security and Arms Control. 7 December 1993 p.3 . See also Lawrence Freedman, 'Great Powers, Vital Interests and Nuclear Weapons', *Survival* (Winter) 1994, 37

[7] Tony Blair *A Journey: My Political Life*, (New York, Knopf, 2010) p.267.

[8] Francis Fukuyama, *The End of History and the Last Man* (New York: Free Press, 1992).

[9] Sinan Ülgen and Ceylan Inan, 'From the Local to the Global: The Politics of Globalization', *Carnegie Europe*, 17 February 2022), at: https://carnegieeurope.eu/2022/02/17/from-local-to-global-politics-of-globalization-pub-86310 (accessed 23 February 2023).

[10] See The Economic Club of Chicago, 'The Right Honorable Tony Blair, Prime Minister of Great Britain, 4/22/99 (Excerpt)', *YouTube*, at: https://www.youtube.com/watch?v=Lqc2MqbhPt0 (accessed 23 February 2023).

[11] James M Scott, *Black snow: Curtis LeMay, the firebombing of Tokyo, and the road to the atomic bomb* (New York: W. W. Norton, 2022).

[12] On this and many other stories of Gen. LeMay's WWII exploits, see the brilliant documentary "Fog of War: Eleven Lessons From The Life Of Robert McNamara." Highlights can be seen at https://www.youtube.com/watch?v=KqJGoyZBa4g. McNamara would become Secretary of Defense under President John Kennedy and would recast American military doctrine.

[13] Robin Edmonds, "Yalta and Potsdam: forty years afterwards," *International Affairs (Royal Institute of International Affairs 1944-)* 62, no. 2 (1986): 197-216.

[14] Efstathios T Fakiolas, "Kennan's long telegram and NSC-68: A comparative theoretical analysis," *East European Quarterly* 31, no. 4 (1997): 415-33. Rhodri Jeffreys-Jones, "Why was the CIA established in 1947?," in *Eternal Vigilance?* (Routledge, 2013), 21-40.

[15] L Douglas Keeney, *15 Minutes: General Curtis LeMay and the Countdown to Nuclear Annihilation* (New York: St. Martin's Press, 2011).

[16] The reasons for MacArthur's dismissal are complex and until recently largely classified. See H.W. Brands, "The Redacted Testimony That Fully Explains Why General MacArthur Was Fired,"

Smithsonian Magazine, September 28, 2016, https://www.smithsonianmag.com/history/redacted-testimony-fully-explains-why-general-macarthur-was-fired-180960622/.

[17] Jody Carlson, *George C. Wallace and the Politics of Powerlessness: The Wallace Campaigns for the Presidency, 1964-1976* (New York: Transaction Publishers, 1981).

[18] Keith B Payne, *The fallacies of Cold War deterrence and a new direction* (Lexington: University Press of Kentucky, 2001). John Lewis Gaddis, *Strategies of containment: a critical appraisal of American national security policy during the Cold War*, Rev. and expanded ed. (New York: Oxford University Press, 2005). John Lewis Gaddis, *We now know: rethinking Cold War history* (Oxford: Clarendon Press, 1997).

[19] David S McDonough, *Nuclear superiority: the'new triad'and the evolution of nuclear strategy* (New York: Routledge, 2006). For a beautifully illustrated primer, replete with exciting streaming video, see "America's Nuclear Triad," *US Department of Defense*, https://www.defense.gov/Multimedia/Experience/Americas-Nuclear-Triad/.

[20] Francis Gary Powers and Curt Gentry, *Operation Overflight: a memoir of the U-2 Incident* (Washington, DC: Potomac Books, Inc., 2004).

[21] See for example, "The Lost Missile" (1958), https://www.imdb.com/title/tt0051881/reviews.

[22] When I worked as a volunteer in gathering oral history stories from the elders of the Inupiat Eskimos in Barrow, Alaska and its associated villages for the Inupiat History, Language and Culture Commission in the early 1990s, several elders recalled being hired to stand out on the tundra with binoculars and a radio to report incoming missiles until a radar net could be constructed. Many of these stories are preserved on Project Jukebox, https://www.imdb.com/title/tt0051881/reviews/.

[23] Serhii Plokhy, *Nuclear Folly: A History of the Cuban Missile Crisis* (New York: WW Norton & Company, 2021).

[24] On the history of the doctrine, see Henry D Sokolski, *Getting MAD: a nuclear mutual assured destruction, its origins and practice* (Strategic Studies Institute, US Army War College, 2004).

[25] John T. Correll, "The Making of MAD," *Air & Space Forces Magazine*, July 27, 2018, https://www.airandspaceforces.com/article/the-making-of-mad/.

[26] On this seemingly magical time in America, see David Halberstam, *The best and the brightest* (New York: Ballantine Books, 1993).

[27] John T. Correll, "The Making of MAD."

[28] Fred Kaplan, *The wizards of Armageddon* (Palo Alto: Stanford University Press, 1991).

[29] Jane Stromseth, *Origins of Flexible Response* (New Yok: Springer, 1988).
Carl H. Amme, "NATO Strategy and Flexible Response," *US Naval Institute*, May 1967, https://www.usni.org/magazines/proceedings/1967/may/nato-strategy-and-flexible-response.
Francis J Gavin, "The myth of flexible response: United States strategy in Europe during the 1960s," *The international history review* 23, no. 4 (2001): 847-75.

[30] Alexey Arbatov, "Mad Momentum Redux? The Rise and Fall of Nuclear Arms Control," *Survival* 61, no. 3 (2019): 7-38. YEKATERINA SINELSCHIKOVA, "How the USSR tried to scare the U.S. with FAKE weapons - and it worked (PHOTOS)," *Russia Beyond*, December 18, 2020, https://www.rbth.com/history/333163-how-ussr-tried-to-scare.

[31] Data for this brief recap of agreements is taken from "U.S.-Russia Nuclear Arms Control: 1949-2021https://www.cfr.org/timeline/us-russia-nuclear-arms-control," *Council on Foreign Relations*, https://www.cfr.org/timeline/us-russia-nuclear-arms-control.

[32] Ibid.

[33] Gaddis, *Strategies of containment: a critical appraisal of American national security policy during the Cold War*.

[34] Hodge, Nathan. "Russia: We'll Nuke 'Aggressors' First." Wired. October 14, 2009. https://www.wired.com/2009/10/russia-well-nuke-aggressors-first/.

[35] Three documents have been examined, which are the following:
Berlin Information Center for Transatlantic Security. "2000 Russian National Security Concept," January 17, 2000. Accessed February 14, 2023. https://www.bits.de/EURA/natsecconc.pdf.
Arms Control Association. "Russia's Military Doctrine," April 21, 2000. Accessed February 14, 2023. https://www.armscontrol.org/act/2000-05/russias-military-doctrine.
FAS. "The Foreign Policy Concept of the Russian Federation," June 28, 2000. Accessed February 14, 2023.https://nuke.fas.org/guide/russia/doctrine/econcept.htm.

[36] Three documents have been examined, which are the following:
Mepoforum.sk. "National Security Strategy of the Russian Federation," May 12, 2009. Accessed February 16, 2023. http://mepoforum.sk/wp-content/uploads/2015/08/NDS-RF-2009-en.pdf.
Permanent Mission of the Russian Federation to the European Union. "The Foreign Policy Concept of the Russian Federation," July 12, 2008. Accessed February 16, 2023. https://russiaeu.ru/userfiles/file/foreign_policy_concept_english.pdf.
Carnegie Endowment for International Peace. "The Military Doctrine of the Russian Federation," February 5, 2010. Accessed February 16, 2023. https://carnegieendowment.org/files/2010russia_military_doctrine.pdf.

[37] Three documents have been examined, which are the following:
Theatrum Belli. "The Military Doctrine of the Russian Federation," December 25, 2014. Accessed February 18, 2023. https://theatrum-belli.com/the-military-doctrine-of-the-russian-federation/.
IEEE. "The Russian Federation's National Security Strategy," December 28, 2015. Accessed February 18, 2023. https://www.ieee.es/Galerias/fichero/OtrasPublicaciones/Internacional/2016/Russian-National-Security-Strategy-31Dec2015.pdf.
Президент России. "Указ Президента Российской Федерации от 30.11.2016 г. № 640," November 30, 2016. Accessed February 18, 2023. http://kremlin.ru/acts/bank/41451.

[38] Engström, Maria. "Russia's Worldview: Katechon and Atomic Orthodoxy." Conference Presentation at Second Danube Summit on Geopolitics, Security, and Defense, Budapest, December 1, 2022.

[39] Makarkin, Aleksei, and Peter M. Oppenheimer. "The Russian Social Contract and Regime Legitimacy." *International Affairs 87*, no. 6 (2011): 1459-1474. Accessed February 21, 2023. https://doi.org/10.1111/j.1468-2346.2011.01045.x.

[40] RussianPerspective. "Putin's Famous Munich Speech 2007," November 20, 2015. https://www.youtube.com/watch?v=hQ58Yv6kP44.

[41] Huntington, Samuel P. 1996. *The Clash of Civilizations and the Remaking of World Order*. Touchstone Books.

[42] "Bucharest Summit Declaration." *Nato.int*, April 3, 2008. North Atlantic Treaty Organization. https://www.nato.int/cps/en/natolive/official_texts_8443.htm.

[43] Kennan, George F. "The Sources of Soviet Conduct." *Foreign Affairs*, July 1, 1947. https://www.foreignaffairs.com/articles/russian-federation/1947-07-01/sources-soviet-conduct.

[44] Johnson, David. "Russia's Deceptive Nuclear Policy." *Global Politics and Strategy 63*, no. 3 (2021): 123-142. Accessed February 14, 2023. https://doi.org/10.1080/00396338.2021.1930410.

[45] Sokov, Nikolai. "Russian Nuclear Strategy." Slide Presentation, June 27, 2016. In Moore, Thomas C. "Tailor-Surgeon, Soviet and Silovik : Russian Nuclear Strategy." *Revue Défense Nationale 2017*, no. 6 (2017): 42-50. Accessed February 16, 2023. https://www.cairn.info/revue-defense-nationale-2017-6-page-42.htm?contenu=article.

[46] Arbatov, Alexei. "Understanding the US-Russia Nuclear Schism." *Global Politics and Strategy 59*, no. 2 (2017): 33-66. Accessed February 14, 2023. https://doi.org/10.1080/00396338.2017.1302189.
[47] Bender, Jeremy. "Putin: 'The Streets of Leningrad Taught Me One Thing'." Business Insider. October 22, 2015. https://www.businessinsider.com/putin-the-streets-of-leningrad-taught-me-one-thing-2015-10.
[48] Reynolds, Kevin. "Is 'Escalate to Deescalate' Part of Russia's Nuclear Toolbox?" Russia Matters. Belfer Center for Science and International Affairs, Harvard Kennedy School, January 8, 2020. https://www.russiamatters.org/analysis/escalate-deescalate-part-russias-nuclear-toolbox.
[49] "Заседание дискуссионного клуба «Валдай»." Kremlin.Ru. President of Russia, October 18, 2018. http://kremlin.ru/events/president/news/58848.
[50] The President of the Russian Federation, *Basic Principles of State Policy of the Russian Federation on Nuclear Deterrence,* June 2, 2020, https://archive.mid.ru/en/web/guest/foreign_policy/international_safety/disarmament/-/asset_publisher/rp0fiUBmANaH/content/id/4152094
[51] See Katarzyna Zysk, 'Defence Innovation and the fourth industrial revolution in Russia, *Journal of Strategic Studies* 44,4 2021
[52] Chekinov, Sergei, and Sergei Bogdanov. "The Nature and Content of a New-Generation War." *Military Thought*, (2013): 12-23. Accessed February 28, 2023. https://www.usni.org/sites/default/files/inline-files/Chekinov-Bogdanov%20Miltary%20Thought%202013.pdf.
[53] Ven Bruusgard, Kristin. "Russian Nuclear Strategy and Conventional Inferiority." *Journal of Strategic Studies 44*, no. 1 (2021): 3-35. Accessed February 14, 2023. https://doi.org/10.1080/01402390.2020.1818070.

[54] Hirsh, Michael. "Why Putin's War Is the West's Biggest Test Since World War II." *Foreign Policy*, February 24, 2022. https://foreignpolicy.com/2022/02/24/russia-ukraine-war-west-world-war-2/.
[55] Coles, Isabel, and David Luhnow. "Russia Has Deployed 97% of Army in Ukraine but Is Struggling to Advance, U.K. Says." The Wall Street Journal. February 15, 2023. https://www.wsj.com/articles/russia-has-deployed-97-of-army-in-ukraine-but-is-struggling-to-advance-u-k-says-91086284.
[56] Szalay-Berzeviczky, Attila, Anton Bendarzsevszkij, and András Deák. "A Nyugati Gazdasági Szankciók Eredménye És Jövője." Conference session. *Magyar Hadtudományi Társaság*. Budapest, Hungary, n.d. https://www.mhtt.eu/tudastar.
[57] "Address by the President of the Russian Federation." Kremlin.Ru. The President of Russia, February 24, 2022. http://en.kremlin.ru/events/president/news/67843.
[58] Hird, Karolina, Riley Bailey, George Barros, Nicole Wolkov, Angela Howard, and Frederick W. Kagan. "Russian Offensive Campaign Assessment, February 28, 2023." Understandingwar.Org. Institute for the Study of War, February 28, 2023. https://www.understandingwar.org/backgrounder/russian-offensive-campaign-assessment-february-28-2023.
[59] "Signing of Treaties on Accession of Donetsk and Lugansk People's Republics and Zaporozhye and Kherson Regions to Russia." Kremlin.Ru. President of Russia, September 30, 2022. http://en.kremlin.ru/catalog/regions/X2/events/69465.

[60] "Russia Threatens to Deploy Tactical Nuclear Weapons." Voice of America. December 14, 2021. https://www.voanews.com/a/russia-threatens-to-deploy-tactical-nuclear-weapons-/6354408.html.

[61] Isachenkov, Vladimir. "Russia to Stage Massive Nuclear Drills amid Ukraine Standoff." AP News. February 18, 2022. https://apnews.com/article/russia-ukraine-joe-biden-europe-russia-vladimir-putin-91749e368bb54bdc42cd747496a21a2f.

[62] "Putin Signals Escalation as He Puts Russia'S Nuclear Force on High Alert." The Guardian. February 28, 2022. https://www.theguardian.com/world/2022/feb/27/vladimir-putin-puts-russia-nuclear-deterrence-forces-on-high-alert-ukraine.

[63] "Russia Lists Justifications to Use Nuclear Weapons as Ukraine War Drags On." Newsweek. March 26, 2022. https://www.newsweek.com/russia-lists-justifications-use-nuclear-weapons-ukraine-war-drags-1692142.

[64] "Kremlin Spokesman: Russia Would Use Nuclear Weapons Only in Case of 'threat to Existence of State'." Reuters. March 28, 2022. https://www.reuters.com/world/kremlin-spokesman-russia-would-use-nuclear-weapons-only-case-threat-existence-2022-03-28/.

[65] "Интервью Министра иностранных дел Российской Федерации С.В.Лаврова программе «Большая игра» на «Первом канале», Москва, 25 апреля 2022 года." Mid.Ru. The Ministry of Foreign Affairs of the Russian Federation, April 25, 2022. https://mid.ru/ru/foreign_policy/news/1810694/?TSPD_101_R0=08765fb817ab2000aee8e7c265093e2066b64fbe83a90f14cf97236e9c8b1dbd545537afd2a79e390808c33e96143000a47d13d9bfe5ae3f7e0c60cd59547558749f9919ba89c71941d5d41dce99bcb97801ec05ff68c1b2915cd5daf710869b.

[66] "Russia-Ukraine Updates: 'Risk of Nuclear War Must Be Minimised'." Al Jazeera. April 29, 2022. https://www.aljazeera.com/news/2022/4/29/ukraine-live-news-mariupol-steel-plant-evacuation-stalls-liveblog.

[67] "Belarus' Dictator Lukashenko, Widely Seen as Putin's Puppet, Says It Would Be 'unacceptable' for Nukes to Be Used in Ukraine." Business Insider. May 5, 2022. https://www.businessinsider.com/belarus-lukashenko-says-use-of-nukes-in-ukraine-would-be-unacceptable-2022-5.

[68] "Russia's Medvedev: Attack on Crimea Will Ignite 'Judgement Day' Response." National Post. July 17, 2022. https://nationalpost.com/pmn/news-pmn/russias-medvedev-attack-on-crimea-will-ignite-judgement-day-response.

[69] "West Could Trigger Nuclear War over Ukraine, Russia Says at U.N." Reuters. August 5, 2022. https://www.reuters.com/world/europe/west-could-trigger-nuclear-war-over-ukraine-russia-says-un-2022-08-02/.

[70] Diaz-Maurin, Francois. ""Not a Bluff:" Losing Ground in Ukraine, Putin Raises Nuclear Threats." Thebulletin.Org. Bulletin of the Atomic Scientists, September 21, 2022. https://thebulletin.org/2022/09/not-a-bluff-losing-ground-in-ukraine-putin-raises-nuclear-threats/.

[71] "Moscow Unlikely to Use Nuclear Weapons, Say Ex-Russian Generals." Al Jazeera. September 23, 2022. https://www.aljazeera.com/news/2022/9/23/little-military-sense-for-nuclear-weapons-ex-russian-general.

[72] "Putin Says 'No Need' for Using Nuclear Weapons in Ukraine." PBS News Hour. October 27, 2022. https://www.pbs.org/newshour/world/vladimir-putin-rules-out-using-nuclear-weapons-in-ukraine.

[73] "Russia's Lavrov: Military Confrontation between Nuclear Powers Must Be Avoided." Reuters. November 30, 2022. https://www.reuters.com/world/russias-lavrov-military-confrontation-between-nuclear-powers-must-be-avoided-2022-11-30/.

[74]"Putin: Nuclear Risk Is Rising, but We Are Not Mad." BBC. December 7, 2022. https://www.bbc.com/news/world-europe-63893316.
[75] "Presidential Address to Federal Assembly." Kremlin.Ru. President of Russia, February 21, 2023. http://en.kremlin.ru/events/president/news/70565.

[76] Nicholas J. Spykman, *America's Strategy in World Politics* (New Haven, Harvard University Press, 1942)
[77] For a short but informative summary, see Alex Wellerstein „King of the Wild Frontier" https://blog.nuclearsecrecy.com/2012/07/20/king-of-the-wild-frontier/
[78] The best string of sources is the Nuclear Notebook on this matter.
Norris, Robert S. – William M. Arkin – Hans M. Kristensen – Joshua Handler: Israel Nuclear Forces 2002. https://thebulletin.org/2002/09/israeli-nuclear-forces-2002/
Norris. Robert S. – Hans M. Kristensen: Israeli Nuclear Weapons 2014.
https://thebulletin.org/2014/11/israeli-nuclear-weapons-2014/
Hans M. Kristensen & Matt Korda (2022) Israeli nuclear weapons, 2021, Bulletin of the Atomic Scientists, 78:1, 38-50, DOI: 10.1080/00963402.2021.2014239
[79] Hans M. Kristensen & Matt Korda Indian nuclear weapons, 2022 Bulletin of the Atomic Scientists (2022) 78, no.3, 236; Hans M. Kristensen & Matt Korda (2021) Pakistani nuclear weapons, 2021,
Bulletin of the Atomic Scientists, 77:5, 265-278
[80] Hans M. Kristensen & Matt Korda (2019) Chinese nuclear forces, 2019,
Bulletin of the Atomic Scientists, 75:4, 171-178
[81] Christopher Clary, Ankit Panda, "Safer at Sea? Pakistan's Sea Based Deterrent and Nuclear Weapons Security" The Washington Quarterly, 40, no. 3, (2017) 149-168, DOI: 10.1080/0163660X.2017.1370344
10.1080/0163660X.2017.1370344
[82] For an informative summary of Israeli and Pakistani submarine capabilities, see relevant entries of the Submarine Proliferation collection. https://www.nti.org/analysis/articles/pakistan-submarine-capabilities/ https://www.nti.org/analysis/articles/israel-submarine-capabilities/ Downloaded: 2023. 04. 04.
[83] Butler, John D., „Coming of Age: The SSGN concept" The Submarine Review (2002) 26-37 https://archive.navalsubleague.org/2002/coming-of-age-the-ssgn-concept Downloaded: 2023. 04. 04.
[84] Fedorov, Yuri, Russia's Armament Program 2020: Current State and Outlook, Security Index: A Russian Journal on International Security, 20:2, (2014) 95-101, DOI: 10.1080/19934270.2014.965964
[85] Zhao Tong, Tides of Change: China's Nuclear Ballistic Missile Submarines and Strategic Stability (Washington D.C, Carnegie Endowment for International Peace, 2018), 44.
[86] The International Institute for Strategic Studies, *The Military Balance 2023* (London, The International Institute for Strategic Studies, 2023), 237, 249, 281.
[87] Kristensen, Hans M. – Matt Korda: „Chinese nuclear forces, 2019" *Bulletin of the Atomic Scientists* 75, no. 4, (2019): 178, auth. cit. Hans M. Kristensen & Matt Korda (2022) Indian nuclear weapons, 2022
Bulletin of the Atomic Scientists (2022) 78, no.3, 236.
[88] Klare, Michael T. "The Arms Trade in the 1990s: Changing Patterns, Rising Dangers." Third World Quarterly 17, no. 5 (1996): 857–74. http://www.jstor.org/stable/3993234.

[89] Elizabeth Wishnick, *Mending Fences: The Evolution of Moscow's China Policy from Brezhnev to Yeltsin* (Seattle, University of Washington Press, 2001), 124.
[90] Amin Ray, *Tracking the Undersea Dragon: Chinese SSBN Programme and the Indo-Pacific* (New York – London, Routledge, 2022), 78.
[91] Iskander Rehman, 2015. *Murky Waters: Naval Nuclear Dynamics in the Indian Ocean* (Washington, DC: Carnegie Endowment for International Peace, 2015), 9. http://carnegieendowment.org/files/murky_waters.pdf
[92] Zia Mian, M.V. Ramana & A.H. Nayyar „Nuclear Submarines in South Asia: New Risks and Dangers" Journal for Peace and Nuclear Disarmament, 2, no. 1, (2019) 185. DOI:10.1080/25751654.2019.1621425 s
[93] Eric Arnett, „Military Technology: the Case of India", in *SIPRI Yearbook 1994*, ed. Stockholm International Peace Research Institute (Oxford, Oxford University Press, 1994), 362.
[94] op cit. also Kristensen: Indian Nuclear Forces, Nuclear Notebook 2002 Khan, Muhammad Azam. "S-2: Options for the Pakistan Navy." Naval War College Review 63, no. 3 (2010): 85–104. http://www.jstor.org/stable/26397126.
[95] Khan, Muhammad Azam. "S-2: Options for the Pakistan Navy." Naval War College Review 63, no. 3 (2010): 85–104. http://www.jstor.org/stable/26397126 Downloaded 2023.02.27
[96] India Draft Nuclear Doctrine Committee, *India Draft Nuclear Doctrine* (New Delhi, Department of Defense, 1999) https://www.armscontrol.org/act/1999-07/indias-draft-nuclear-doctrine Downloaded 2023.02.27
[97] Eric Arnett: „Military Research and Development" in SIPRI Yearbook 1999, ed. Stockholm International Peace Research Institute (Oxford, Oxford University Press, 1999) 357.
[98] James Goldrick, *No Easy Answers: The Development of the Navies of India, Pakistan, Bangladesh and Sri Lanka 1945-1996* (New Delhi – London – Hartford, Lancer Publishers, 1997), 149. https://www.navy.gov.au/sites/default/files/documents/PIAMA02.pdf Downloaded 2023.02.27
[99] Zahra, Farah. "Pakistan's Road To a Minimum Nuclear Deterrent." Arms Control Today 29, no. 5 (1999): 9–13. http://www.jstor.org/stable/23626106. Downloaded 2023.02.27
[100] India Draft Nuclear Doctrine Committee, *India Draft Nuclear Doctrine* (New Delhi, Department of Defense, 1999) https://www.armscontrol.org/act/1999-07/indias-draft-nuclear-doctrine The earliest Chinese materials located was 2010, but Alastair Johnston gives description of earlier concepts in auth cit.: "China's New 'Old Thinking': The Concept of Limited Deterrence." *International Security* 20, no. 3 (1995): 5–42. https://doi.org/10.2307/2539138.
[101] Johnston, Alastair Iain. "Prospects for Chinese Nuclear Force Modernization: Limited Deterrence versus Multilateral Arms Control." The China Quarterly, no. 146 (1996): 548–76. http://www.jstor.org/stable/655480. Downloaded 2023.02.27
[102] Hans M. Kristensen – Robert S. Norris – Matthew G. Mckinzie, *Chinese Nuclear Forces and U.S. War Planning* (Washington D.C. – New York, Federation of American Scientists – National Resources Defense Council, 2006), 131-133.
[103] Information Office of the State Council, China's National Defense in 2010 (Beijing, Information Office of the State Council, 2011) http://english.www.gov.cn/archive/white_paper/2014/09/09/content_281474986284525.htm Downloaded 2023.02.27
[104] Johnston, Alastair Iain. "Prospects for Chinese Nuclear Force Modernization: Limited Deterrence versus Multilateral Arms Control." The China Quarterly, no. 146 (1996), 555. http://www.jstor.org/stable/655480. Downloaded 2023.02.27
[105] Information Office of the State Council, China's National Defense in 2010 (Beijing, Information Office of the State Council, 2011)

http://english.www.gov.cn/archive/white_paper/2014/09/09/content_281474986284525.htm Downloaded 2023.02.27

[106] The International Institute for Strategic Studies, *The Military Balance 2011*, London, The International Institute for Strategic Studies, 2023), 231.

[107] Robert S. Norris - Hans M. Kristensen "Chinese nuclear forces, 2010" *Bulletin of the Atomic Scientists*, 66, no. 6, (2010) 134-141, DOI: 10.1177/0096340210387046

[108] : Hans M. Kristensen & Robert S. Norris „Indian nuclear forces, 2012" *Bulletin of the Atomic Scientists*, 68, no. 4, (2012) 96-101, DOI: 10.1177/0096340212451431

[109] Cantuti, Lara. "Pakistan Looks to Russia, France For Advanced Aircraft and Subs." *Arms Control Today*, vol. 24, no. 10, 1994, pp. 22–22. JSTOR, http://www.jstor.org/stable/23625534. Downloaded 2023. 02. 27.

[110] Maj. Muhammad Zeeshan Ali, *Strategic Delusions – The Cold Start Doctrine: Proactive Strategy* (Fort Leavenworth, United States Army Command and General Staff College, 2016) https://www.hsdl.org/?view&did=811124 Downloaded: 2023. 02. 27.

[111] Raid of the U.S. Special Forces on the city of Abottabad successfully aimed at the killing of Usama bin Laden

[112] „Pak Navy Inaugurates new Strategic Force Headquarters" https://www.hindustantimes.com/world/pak-navy-inaugurates-new-strategic-force-headquarters/story-mAAqxt7O7K6tMEiJ7pwBYP.html

[113] Christopher Clary, Ankit Panda, "Safer at Sea? Pakistan's Sea Based Deterrent and Nuclear Weapons Security" *The Washington Quarterly*, 40, no. 3, (2017) 149-168, DOI: 10.1080/0163660X.2017.1370344
10.1080/0163660X.2017.1370344

[114] "Further Expansion of China's Nuclear Submarine Shipyard" http://www.hisutton.com/Chinese-Navy-Huludao-Expanding-202301.html

[115] Amin Ray, *Tracking the Undersea Dragon: Chinese SSBN Programme and the Indo-Pacific* (New York – London, Routledge, 2022), 111.

[116] Zhao Tong, *Tides of Change: China's Nuclear Ballistic Missile Submarines and Strategic Stability* (Washington D.C, Carnegie Endowment for International Peace, 2018), 59.

[117] op. cit. 31.

[118] op. cit. 56-57.

[119] Nobuyuki, Nose „The Formation of AUKUS and Australia's Path to Its First Nuclear Submarine" https://www.nippon.com/en/in-depth/d00766/

[120] https://www.nti.org/analysis/articles/north-korea-submarine-capabilities/

[121] Ellen Kim "North Korea Launches Strategic Cruise Missiles from Submarine" https://www.csis.org/analysis/north-korea-launches-strategic-cruise-missiles-submarine Downloaded 2023.05.01

[122] Hans M. Kristensen – Matt Korda, "North Korean Nuclear Weapons" Bulletin of the Atomic Scientists, 78, no. 5, (2022) 273-294.

[123] See Fact Sheet *Nuclear Threat Institute* October 2022 https://www.nti.org/analysis/articles/south-korea-submarine-capabilities/

[124] https://edition.cnn.com/2023/04/27/asia/us-south-korea-nuclear-armed-submarine-explainer-intl-hnk-ml/index.html

[125] Lawrence Freedman, 'Great Powers, Vital Interests and Nuclear Weapons', *Survival* (Winter) 1994, 37

[126] Carl von Clausewitz *On War* (London, Penguin, 1968) p.109. See also Anatol Rapoport's 'Introduction' to *On War* pp.66-67.

Bibliography

Primary sources

Arms Control Association. "Russia's Military Doctrine," April 21, 2000. Accessed February 14, 2023. https://www.armscontrol.org/act/2000-05/russias-military-doctrine.

Berlin Information Center for Transatlantic Security. "2000 Russian National Security Concept," January 17, 2000. Accessed February 14, 2023. https://www.bits.de/EURA/natsecconc.pdf.

Carnegie Endowment for International Peace. "The Military Doctrine of the Russian Federation," February 5, 2010. Accessed February 16, 2023. https://carnegieendowment.org/files/2010russia_military_doctrine.pdf.

FAS. "The Foreign Policy Concept of the Russian Federation," June 28, 2000. Accessed February 14, 2023.https://nuke.fas.org/guide/russia/doctrine/econcept.html

IEEE. "The Russian Federation's National Security Strategy," December 28, 2015. Accessed February 18, 2023. https://www.ieee.es/Galerias/fichero/OtrasPublicaciones/Internacional/2016/Russian-National-Security-Strategy-31Dec2015.pdf.

Mepoforum.sk. "National Security Strategy of the Russian Federation," May 12, 2009. Accessed February 16, 2023. http://mepoforum.sk/wp-content/uploads/2015/08/NDS-RF-2009-en.pdf.

Permanent Mission of the Russian Federation to the European Union. "The Foreign Policy Concept of the Russian Federation," July 12, 2008. Accessed February 16, 2023. https://russiaeu.ru/userfiles/file/foreign_policy_concept_english.pdf.

The President of the Russian Federation, *Basic Principles of State Policy of the Russian Federation on Nuclear Deterrence,* June 2, 2020, https://archive.mid.ru/en/web/guest/foreign_policy/international_safety/disarmament/-/asset_publisher/rp0fiUBmANaH/content/id/4152094

Theatrum Belli. "The Military Doctrine of the Russian Federation," December 25, 2014. Accessed February 18, 2023. https://theatrum-belli.com/the-military-doctrine-of-the-russian-federation/.

Президент России. "Указ Президента Российской Федерации от 30.11.2016 г. № 640," November 30, 2016. Accessed February 18, 2023. http://kremlin.ru/acts/bank/41451.

Secondary sources

Arbatov, Alexei. "Understanding the US-Russia Nuclear Schism." *Global Politics and Strategy 59*, no. 2 (2017): 33-66. Accessed February 14, 2023. https://doi.org/10.1080

/00396338.2017.1302189.

Arbatov, Alexey. "Mad Momentum Redux? The Rise and Fall of Nuclear Arms Control." *Survival* 61, no. 3 (2019/05/04 2019): 7-38.

Engström, Maria. "Russia's Worldview: Katechon and Atomic Orthodoxy." Conference Presentation at Second Danube Summit on Geopolitics, Security, and Defense, Budapest, December 1, 2022.

Fakiolas, Efstathios T. "Kennan's Long Telegram and Nsc-68: A Comparative Theoretical Analysis." *East European Quarterly* 31, no. 4 (1997): 415-33.

Gaddis, John Lewis. *Strategies of Containment: A Critical Appraisal of American National Security Policy During the Cold War*. Rev. and expanded ed. New York: Oxford University Press, 2005.

———. *We Now Know: Rethinking Cold War History*. Oxford: Clarendon Press, 1997.

Gavin, Francis J. "The Myth of Flexible Response: United States Strategy in Europe During the 1960s." *The international history review* 23, no. 4 (2001): 847-75.

Johnson, David. "Russia's Deceptive Nuclear Policy." *Global Politics and Strategy 63*, no. 3 (2021): 123-142. Accessed February 14, 2023. https://doi.org/10.1080/00396338.2021.1930410.

Keeney, L Douglas. *15 Minutes: General Curtis Lemay and the Countdown to Nuclear Annihilation*. New York: St. Martin's Press, 2011.

McDonough, David S. *Nuclear Superiority: The'new Triad'and the Evolution of Nuclear Strategy*. New York: Routledge, 2006.

Payne, Keith B. *The Fallacies of Cold War Deterrence and a New Direction*. Lexington: University Press of Kentucky, 2001.

Plokhy, Serhii. *Nuclear Folly: A History of the Cuban Missile Crisis*. New York: WW Norton & Company, 2021.

Reynolds, Kevin. "Is 'Escalate to Deescalate' Part of Russia's Nuclear Toolbox?" Russia Matters. Belfer Center for Science and International Affairs, Harvard Kennedy School, January 8, 2020. https://www.russiamatters.org/analysis/escalate-deescalate-part-russias-nuclear-toolbox.

Schneider, M. B. (2018). Russian nuclear "de-escalation" of future war. *Comparative Strategy*, *37*(5), 361-372. https://doi.org/10.1080/01495933.2018.1526558

Scott, James M. *Black Snow: Curtis Lemay, the Firebombing of Tokyo, and the Road to the Atomic Bomb*. New York: W. W. Norton, 2022.

Sokolski, Henry D. *Getting Mad: A Nuclear Mutual Assured Destruction, Its Origins and Practice*. Strategic Studies Institute, US Army War College, 2004.

Stromseth, Jane. *Origins of Flexible Response*. New York: Springer, 1988

Ven Bruusgard, Kristin. "Russian Nuclear Strategy and Conventional Inferiority." *Journal of Strategic Studies 44*, no. 1 (2021): 3-35. Accessed February 14, 2023. https://doi.org/10.1080/01402390.2020.1818070.

Zysk, K. (2018). Escalation and Nuclear Weapons in Russia's Military Strategy. *The RUSI Journal*, *163*(2), 4-15. https://doi.org/10.1080/03071847.2018.1469267

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