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The nuclear panorama in the Indo-Pacific: a region in constant turmoil

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Abstract:

The Indo-Pacific is a key geopolitical arena marked by nuclear complexity and the constant challenge of maintaining stability in an increasingly tense security environment. Since World War II, there have been nuclear tests in the region and evolving military doctrines that have consolidated a delicate strategic environment. Currently, with states such as China, India, Pakistan and North Korea possessing nuclear capabilities, territorial rivalries and political disputes are intensifying. This chapter examines the drivers of nuclear proliferation in the Indo-Pacific, the implications of alliances such as AUKUS and the evolution of nuclear deterrence and modernisation amongst key actors, especially China and North Korea. It also explores regional efforts for non-proliferation and arms control, and the challenges in creating a nuclear-weapon-free zone in Northeast Asia. Faced with complex alliances and growing military capabilities, it highlights recommendations for avoiding conflicts, promoting cooperation and confidence-building measures.

Keywords:

Indo-Pacific, Nuclear, China, United States, Missiles.

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Introduction

The Indo-Pacific has historically been a complex and multifaceted geopolitical scenario, marked by key milestones that have shaped international relations. For example, on 6th and 9th August 1945, the United States dropped two atomic bombs on the Japanese cities of Hiroshima and Nagasaki. These events marked the dawn of the nuclear age and left an indelible impact on global consciousness. It is also a region marked by fifty years of nuclear testing where, since the nuclear bombings in 1945 until the tests conducted by Pakistan in 1998, there has never been a period of more than twenty-two months without nuclear testing. Finally, the denuclearisation movement was a significant political movement in the Indo-Pacific that was able to establish two nuclear-weapon-free zones (NWFZs) through the Treaty of Rarotonga in 1985 and the Treaty of Bangkok of 1995.

Today, nuclear politics in the Indo-Pacific are a game of shifting dynamics ranging from security issues to strategic considerations. This region is home to the world's largest number of states with nuclear weapons, as well as those with nuclear latency, each with its own nuclear policies and strategies. Given this situation, efforts to promote arms control and non-proliferation have become crucial in the Indo-Pacific, as geopolitical rivalries and territorial disputes may have nuclear implications. For example, nuclear alliances such as the extended deterrence commitments of the United States with Japan and South Korea have major implications for regional security. Efforts to reduce the risk of nuclear conflict, improve crisis communication, and establish confidence-building measures are key to ensuring stability in the region.

This chapter therefore analyses each of the regional hotspots of conflict where nuclear capabilities are present and suggests initiatives and recommendations for dealing with possible destabilising scenarios that arise from the presence of said capabilities.

21st-century nuclear dynamics in the Indo-Pacific

By the midpoint of this century, the Indo-Pacific will be shaped by four main dynamics: managing China's rise, the challenge of reassessing strategic interests in the US-led Asian alliance network, regional disparities in addressing endemic security issues, and the prevalence of traditional security dilemmas in conflict points such as the Taiwan Strait or the Korean Peninsula (Lee and Pempel 2012: 3-21). These trends are reflected in the

struggle for regional hegemony between China and Washington's allies (Japan, South Korea, Taiwan, Australia and India), the recent developments on the Korean peninsula; intra-regional competition in territorial disputes in the East and South China Seas, and perhaps, most importantly, the lines of long-term regional strategic competition and cooperation between China and the United States.

At the same time, security dynamics in the Indo-Pacific are related to a regional economic interdependence, which presents a paradox: despite historical tensions and rivalries, perpetual strategic mistrust and weak multilateral regional institutional architecture, the Indo-Pacific security complex is also defined by non-military rules of state behaviour (Pempel 2012: 212-232). These centrifugal and centripetal forces both amplify and mitigate the sources of conflict in the region. Even so, the risk of miscalculation and potential confrontation persists: economic interdependencies cannot resolve the region's persistent security dilemmas amidst national interests, strategies, aspirations and growing capabilities in terms of power projection. More importantly, deepening economic interdependencies are juxtaposed with the strategic ramifications of competing visions between China and the US, which also poses a challenge for Washington since Japan, South Korea, India and Australia now trade more with China than with the US. The main challenge for these key US regional allies is to pursue two fundamentally opposing policy objectives: to boost and maintaining security ties with the US while deepening economic ties with China (Lee and Pempel, 2012: 4); a China that they also criticise for its increasingly assertive behaviour and lack of transparency regarding its modernisation and expansion of nuclear and conventional capabilities. In the face of uncertainty regarding the future strategic and security panorama, US allies in the region are increasing their military spending and implementing hedging strategies to address their growing security concerns. As a matter of fact, they are acquiring indigenous power projection capabilities such as fifth-generation air platforms, long-range precision weapons, ballistic and cruise missiles and early warning, intelligence, surveillance, and reconnaissance (EW-ISR) systems, as well as naval assets, maritime patrols and submarines. They are also displaying their political will to use these assets in different strategic contexts such as Northeast Asia, for example.

These developments are increasing the risk of open conflict between regional powers, especially in scenarios such those of the Korean peninsula or Taiwan. Any escalation of

tension leading to open war in the region would be, however, the result of a miscalculation or false perception of reality rather than the result of a deliberate decision. In a prescient article published in November 2014, Desmond Ball[1] argued that there are military-technical incentives in Northeast Asia for both sides to escalate "even an unintentional minor conflict" (Ayson and Ball, 2014). According to Ball, the vulnerable nature of contemporary Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) capabilities increases the risk that one party will use force if it perceives - rightly or wrongly - that an adversary seeks to take significant and imminent military action against said party, especially if that action targets these capabilities (Ayson and Ball, 2014). Likewise, the scholar Fiona Cunningham has argued that Beijing and Washington's diametrically opposed visions of escalation control significantly increase the risk of crises escalating into full-scale conflicts, including the possibility of crossing the nuclear threshold (Cunningham and Fravel, 2019: 61-109).

China's strategic ambition is to usurp the United States' position in the Indo-Pacific and thus become the sole actor, while the latter seeks to maintain its position. While both sides continue to express their willingness to wage war to defend their broader objectives, they do so mainly in order to convince the other side to back down without fighting. However, given the stakes involved, it is unlikely that either party will do so. As tensions continue to rise, Beijing and Washington will ultimately face a choice between backing down in humiliating fashion or actually waging war, most likely over Taiwan, given that both sides have indicated their readiness to use force to defend the island. Beijing and Washington are likely to pick conflict over a humiliating concession that could fatally undermine their overall strategic position in the Indo-Pacific.

The risk of inadvertent or unintended escalation has already been recognised by countries in the region (Government of Australia, 2017), and the Regional Forum of the Association of Southeast Asian Nations (ASEAN) has held workshops to discuss measures for nuclear risk reduction in the region (Watts, 2023). Australia's Foreign Minister Penny Wong publicly called upon Beijing to reciprocate the Biden administration's calls to establish "guardrails"[2] designed to prevent the increasingly tense US-China rivalry from escalating into conflict. She is also reported to have discussed this issue privately with her Chinese counterpart

[1] Desmond John Ball was an Australian academic and expert on defence and security. He is credited with successfully advising the United States against nuclear escalation in the 1970s.
[2] The term "guardrails" here refers to mechanisms that halt, prevent or impede open conflict between countries.

(Tillett, 2022). Wong (2023) also spoke of the balance to be struck between "strategic reassurance through diplomacy" and military deterrence if conflict is to be avoided and stability preserved, especially with regard to Taiwan. Indeed, deterrence is widely seen in the region as the only way to avoid open war between regional powers. However, assessments such as these assume a rational calculation by the parties involved and overlook the extent to which deterrence tends to increase rather than decrease the risks of inadvertent escalation. It is true that there has been an increase in dangerous encounters at sea and in the air since the United States and its allies have adopted increasingly robust deterrence strategies vis-à-vis China (Strating, 2023).

However, even if it is accepted that there is a real risk of inadvertent escalation in the region, there is little enthusiasm among regional powers to adopt any measures to mitigate it. For example, with regard to the creation of incident prevention mechanisms between China and the United States, the chances of these adversaries reaching an agreement to de-escalate their rivalry is quite low as long as the underlying problems between them remain unresolved, as is the case here.

To sum up, China's increasing power projection capability is gradually redefining the regional military balance and consequently, US strategy and that of its partners and allies. All of this is generating preferences for strategic competition between regional powers, where asymmetric denial and strategic ambiguity in the nuclear sphere will increase the likelihood of conflict in the Indo-Pacific in the near future. The following sections explore each regional hotspot one by one, as well the key actors in the region where nuclear capabilities are present, and propose recommendations to prevent these hotspots from escalating or, if they do, to ensure that the escalation may be controlled.

China: a global nuclear power with regional implications

During this century, China will be present either directly or indirectly in all security issues related to the Indo-Pacific. The military, political and economic rise of the Asian giant has provided Beijing with new geopolitical opportunities to increase the range of strategic choices and decisions. At the same time, China's rise has led to some uncertainty about how an Indo-Pacific dominated by this power would look like. According to Feng Zhu (2009: 17-45), Professor of Business Administration at Harvard Business School,

"China's greatest challenge is to manage its own rise — to take advantage of its stronger capabilities to expand its regional influence without provoking the regional instability that could undermine its long-term economic prosperity and integration". Indeed, China suffers from numerous internal challenges, all of which have an external dimension, thus creating insecurity in its regional neighbours, many of which still have territorial and maritime disputes with Beijing. China also seeks to be recognised as a great power by reasserting its geopolitical role and influence in the region by leveraging its global economic power and boosting its military capabilities. The cumulative effects of these developments have been substantial, as the catalogue of air, land and naval platforms and assets of the People's Liberation Army (PLA)[3] is gradually catching up in terms of both qualitative sophistication and operational effectiveness (Erickson, 2012: 60-125).

China's accumulation of political, economic and military power is thus reshaping regional geopolitics in a way that is detrimental to the United States and its regional allies. Indeed, over the past eight decades, US policy in the region has remained fairly constant: to maintain a solid active presence embedded in bilateral alliances to preserve access and mobility in the Western Pacific and thus defend its allies and ensure peace, stability and prosperity in the region. While the United States continues to maintain broad strategic advantages thanks to its regional presence and relative technological and military superiority-, China is arguably challenging Washington's ability to ensure stability in the region (Blumenthal, 2012: 168). This may be seen in the fact that China seeks to project greater power regionally in its three seas (the Yellow Sea, East and South China Seas) or in areas disputed with Japan and Taiwan. This projection has been interpreted in US strategic circles as a denial of freedom of action for US forces by restricting deployments into the theatre of operations (anti-access) and denying the freedom of movement of forces already there (area denial) (Schreer, 2013). In the long term, China seeks to gain strategic control over its periphery, which would involve rolling back the US presence to its bases in Guam. The US, on the other hand, with its strategic rebalancing policy towards the Indo-Pacific, seeks to remain a Pacific power with its presence and its economic, diplomatic, cultural and military influence (Ratner, 2013: 21-38).

[3] The People's Liberation Army (PLA) is the army of the Chinese Communist Party (CCP) and the People's Republic of China (PRC). It consists of four services: Army, Navy, Air Force and Rocket or Missile Force. It is headed by the Central Military Commission (CMC), whose chairman is the commander-in-chief.

With regard to China's current and future nuclear capabilities, the 2024 Nuclear Notebook of the Bulletin of the Atomic Scientists estimates that China possesses around five hundred nuclear warheads and that more are being produced to equip future delivery systems (Kristensen, 2024b). Other estimates, such as those of the Nuclear Threat Initiative (NTI), indicate that China could have 320 nuclear warheads, as well as 280 ICBMs, 72 SLBMs and 20 gravity bombs (Nuclear Threat Initiative, n. d.). These figures would make China's nuclear arsenal the third largest in the world, after Russia and the United States.

Of the nine nations with nuclear weapons, China is deemed to have one of the fastest growing nuclear arsenals today. According to the US Department of Defence in its 2022 annual report, in line with China's modernisation goals, it is expected to have more than a thousand operational nuclear weapons by 2030, many of which are likely to be "deployed at higher readiness levels". And if China is to keep up the pace of its nuclear expansion at the rate anticipated in 2022, it will most likely have an arsenal of about one thousand five hundred warheads by 2035, which is the date planned by the PLA to "basically complete its modernisation". China has also built new nuclear testing facilities.

The increased quantity and quality of China's nuclear arsenal raises serious concerns due to the country's opacity in developing these new capabilities. China's increased nuclear arsenal is mainly for two reasons: firstly, to maintain a credible deterrent to other states with nuclear weapons that it is competing with, namely India and the US. And secondly, to enhance its global status as a powerful country with a strong nuclear deterrent. What should be ruled out is that China is seeking nuclear parity with the United States and Russia. There is no data to support this hypothesis. For example, given that the US has eight hundred strategic nuclear weapon launchers and an arsenal of three thousand and seven hundred warheads, even if China ends up with more intercontinental ballistic missiles than the US and increases its nuclear arsenal to one thousand and five hundred warheads by 2035, this "does not give China parity" (Kristensen, 2023). What this expansion of China's nuclear capabilities does demonstrate is the shift from a doctrine based on minimum deterrence to one of limited deterrence. Alastair Iain Johnston (1995: 5-6) notes that, according to Chinese strategists, limited deterrence "requires sufficient tactical, theatre and strategic counterforce and countervalue nuclear forces to

deter the escalation of conventional or nuclear war. If deterrence fails, this capability should be sufficient to control escalation and force the enemy to retreat".

China has also upgraded its force structure to the People's Liberation Army Rocket Force (PLARF), which has invested significantly in modernising its nuclear forces by upgrading its silo-based intercontinental ballistic missiles and adding more launch and survivable delivery vehicles. According to the 2019 Chinese Defence White Paper, the PLARF is working to increase the credibility and effectiveness of nuclear deterrence and counter-attack capabilities, boosting long and intermediate-range strike force, and improving the strategic counterforce capability to build a strong and modernised missile force (State Council of the People's Republic of China, 2019). This was proven in 2018 when the PLARF commissioned the DF-26 missile, marking a significant step forward in its military arsenal. The DF-26 has a range of up to four thousand kilometres and the capacity to carry a twelve hundred to eighteen hundred kilogram nuclear or conventional warhead, allowing China to directly attack the US territory of Guam or to target ships at sea, which is considered as “ace in the hole” and a “new strategic tool” (Panyue, 2018) for the PLARF. The 2023 report of the US Department of Defence suggests that:

> The PRC may be exploring development of conventionally-armed intercontinental range missile systems. If developed and fielded, such capabilities would allow the PRC to threaten conventional strikes against targets in the continental United States, Hawaii, and Alaska. Conventionally-armed ICBMs would present significant risks to strategic stability”. (US Department of Defence, 2023).

Currently, China's ICBM arsenal is at approximately three hundred and fifty (Chase, 2018), including fixed and mobile launchers capable of launching single and multiple re-entry vehicles. Some sources indicate that the new ICBM DF-27 is already operational (Gwadera, 2023). These developments suggest that the PLARF is not only providing key military capabilities but has also become a “potential source of coercive leverage” for Beijing, which also acts as a 'visible symbol' of China's major power status (Gwadera, 2023.)

From China's perspective, changes in the estimates of what constitutes a credible minimum deterrent are the cause of structural and size-related variations in the nuclear force. The evolving security landscape and the growing external challenges facing China are also driving these changes. In short, China's long-standing policy of maintaining a small nuclear deterrent is no longer satisfactory for a rising nation.

Northeast Asia: stability and underlying threats

North Korea represents one of the most persistent nuclear proliferation challenges in the Indo-Pacific. Its nuclear programme started in the late 20th century, and since then, it has evolved into a series of nuclear and ballistic missile tests that have escalated tensions on the Korean peninsula and beyond. despite numerous sanctions and diplomatic efforts, including six-party talks, North Korea has continued to develop its nuclear capabilities, citing the need for deterrence against perceived external threats. The nature of the North Korean regime further increases the unpredictability and difficulty of assessing the exact capabilities of its nuclear arsenal. Thus, in the case of North Korea, international society faces the challenge of striking a balance between implementing sanctions, extending diplomatic initiatives, and ensuring a stable regional security environment; the ultimate goal of these measures being to achieve the denuclearisation of the Korean peninsula. Until this goal is achieved however, international society must cope with the qualitative and quantitative growth of North Korea's nuclear arsenal.

North Korea poses a nuclear risk through various avenues, both intentional and unintentional. For example, there are numerous command and control problems in North Korea, which has opted for an offensive orientation with a low threshold for use. The risks of escalation are also manifold: in a multipolar context, a major concern will be how measures taken by the United States, South Korea and Japan to deter North Korea will threaten Russian and Chinese interests. A secondary set of concerns arises from how the Korean peninsula will contribute to increased regional nuclear risks by exerting proliferation pressures on US allies. Ultimately, as may be seen, containing North Korea is an extremely difficult task within the current diplomatic environment.

North Korea's nuclear and missile programme and its nuclear doctrine

At the 8th Congress of the Workers' Party of Korea, Kim Jong-un, the party's general secretary, announced the five-year plan for the "development of defence science and weapons systems", and emphasised the development of "tactical nuclear weapons" and "advanced capabilities for pre-emptive and retaliatory nuclear strikes" (Korean Central News Agency Watch, 2021). Stressing the importance of powerful defence capabilities, the five-year plan pursues the development of strategic and tactical weapons, including miniaturised nuclear warheads, tactical nuclear weapons, large nuclear warheads, hypersonic warheads, solid-fuel ICBMs, nuclear-powered submarines, SLBMs and a military reconnaissance satellite. Two months following the publication of the new defence plan, North Korea launched two cruise missiles on 21st March 2022 and two ballistic missiles into the Sea of Japan on 25th March 2022. In October 2022, it inaugurated a set of new large-scale weapons at the first national expo on defence development. By way of demonstrating its capabilities, between 2021 and 2023, the North Korean armed forces conducted a series of short-, medium-, and long-range missile tests. If the situation wasn't already tense enough, renewed activity in Tunnels 3 and 4 at Punggye-ri which was closed in 2018, indicate a possible resumption of nuclear testing.

It is well-known that nuclear weapons play a vital role for the North Korean regime, including defence and deterrence, economic leverage and reunification. What is noteworthy is the recent expansion and modernisation. What is driving North Korea to rush ahead with the development of its nuclear and missile programmes? Firstly, in the face of the growing conventional military imbalance between the two Koreas, Pyongyang has no choice but to resort to its nuclear weapons. Facing a growing asymmetry in conventional force capabilities, North Korea has decided to invest in its nuclear capabilities rather than in an ageing conventional force, both for cost and strategic reasons, in order to rebalance power on the Korean peninsula. Secondly, changing geopolitical dynamics which have escalated the tensions between the United States, China and Russia, provide North Korea with a major opportunity to accelerate its nuclear build-up. As long as China and Russia maintain their support for North Korea and are unwilling to address the North Korean nuclear issue, North Korea will continue to advance its nuclear goal.

With regard to its nuclear doctrine, in September 2022, North Korea adopted a new law called *On North Korea's Policy on Nuclear Forces*, which replaced the previous nuclear law passed in 2013. The new law introduces significant changes to its nuclear policy, first, in the area of command and control, and second, in the right[4] to pre-emptively use nuclear weapons. According to Article 3, Kim Jong-un has “all decisive powers” over command and control. It also allows for the automatic and immediate launch of nuclear weapons if the command and control system is compromised[5]. This suggests that North Korea grants a very limited delegation of authority to use nuclear weapons in the event of an emergency.

Another specific characteristic of its updated nuclear doctrine is the pre-emptive use of nuclear weapons. Article 6 allows for pre-emptive nuclear strikes when a military attack against "the leadership of the State, the head of the State’s nuclear forces or important strategic objectives of the State” is deemed imminent. North Korea seeks to use nuclear force against both nuclear and conventional threats from the United States and South Korea. By intentionally lowering the nuclear threshold, its goal becomes not only to strengthen deterrence and defence but also to limit what it considers growing threats, such as South Korea's counterforce capability and the joint and the joint military posture between South Korea and the US.

Despite certain limitations, it is clear that North Korea's nuclear strategy has evolved in a more aggressive direction to rely now on "triangular deterrence” and "asymmetric escalation" This makes North Korea's nuclear doctrine unique: North Korea seeks deterrence against the United States, as well as indirect deterrence towards South Korea. Likewise, North Korea, which lacks technological parity with its southern rival, seeks to counter the leading nuclear power (the US) by threatening a neighbouring state that is its ally (Harkavy, 1998: 63-81), thus adding even more pressure on South Korea.

China, an actor to engage or deter?

South Korea has a less hostile relationship with China than with North Korea. For this reason, Seoul has so far not felt the need to clarify the red lines regarding use of its long-

[4] The term “right” is used by the law itself.
[5] On option that may be considered by North Korea for this type of scenario is a Dead Hand system similar to Russia (see the chapter by Luis V. Pérez Gil in this volume).

range strike capabilities in its bilateral relations with Beijing. However, certain recent developments may require more clearly defined assurances with regard to China. For example, in 2021, South Korea lifted the range limitations on its missiles[6]. For the first time, South Korean missiles can now reach targets over a thousand kilometres away, putting not only the entire North Korean territory within range, but also Beijing and the Taiwan Strait (Eveleth, 2023).

Beijing has likely noted this change, but is yet to make any official comment on its implications. South Korean President Yoon declared that South Korean missiles are only intended to attack North Korea. But this comment reflects a fundamental dilemma for South Korea: given its geographic proximity to both North Korea and China, for every step it takes to deter North Korea, it must ensure that China is not the real target. China's harsh reaction to the 2016 deployment of a US Terminal High Altitude Area Defence (THAAD) system in South Korea demonstrated the need for better security guarantees if South Korea is to avoid unnecessarily provocative retaliation by China.

In this sense, South Korea is attempting to maintain a diplomatic posture based on values and "mutual respect" (Yuan, 2022) as an attempt to make a progressive reset in its relations with China. Although there have been some tense exchanges between Chinese and South Korean diplomats recently, the relationship seems to be stabilising (Snyder, 2023). For example, the South Korean president's office has been clear about its intention to organise a visit by Xi Jinping to Seoul in the near future. Similarly, South Korea and Japan are currently planning to resume trilateral talks between foreign ministers with China through the Trilateral Cooperation Secretariat (TCS). Despite attempts by the previous South Korean administration to expand its work, the TCS has generally avoided hard security issues. However, this effort represents at least a return to high-level talks that include China. The TCS is a forum where some level of trust may start to be built among top diplomats. Separately, Japan and China have recently established a hotline between their respective defence ministries. However, a much-needed hotline between the Japan Self-Defence Forces and the PLA is still missing.

[6] South Korea's ballistic missile range guidelines were an agreement between South Korea and the United States, in force from 1979 to 2021, aimed at reducing missile proliferation in the region. It limited the range of South Korean weapons so that nearby nations other than North Korea would not feel threatened, thus limiting their desire to build similar weapons. On 21st May 2021, South Korean President Moon Jae-in and US President Joseph Biden agreed to completely abolish missile guidelines, allowing South Korea to develop and possess any type of missile, including ICBMs and SLBMs.

These initiatives and moves by all sides could also present an opportunity for action on deterrence communication. Ideally, this effort should include an attempt to clarify intentions and red lines with Beijing. The problem remains that South Korea and Japan have little experience in engaging China in a deterrence dialogue and face enormous difficulties in talking to Beijing on hard security issues, where their efforts often fail. In this regard, it is worth noting that Japan and South Korea's policies focus on deterrence, but they do not adequately conceptualise the implementation of security guarantees *vis-à-vis* China and North Korea as a necessary element of this deterrence. A coordinated approach to integrating security assurances into deterrence relations is key to making these efforts effective. Otherwise, China and North Korea may take advantage of gaps between the policies of different countries, or between these and US policy.

Security guarantees face some of the same dilemmas as deterrence. Therefore, reaching an agreement between Japan and South Korea on guarantees will be complicated. The key will be in the details: agreeing on the principles underpinning the guarantees, their scope and institutional framework. The difficulty of reconciling different priorities, interests and political cultures among security partners must be addressed for all of these issues. Security guarantees may take many different forms. Some may be communicated discreetly, in the form of political promises, while others may be embodied in written documents. Some may be agreed bilaterally (e.g. between North and South Korea) and others plurilaterally. They may also be integrated at the multilateral level, for example through UN resolutions or initiatives within the NPT framework. In turn, assurances from South Korea and Japan need to be matched by assurances from China and North Korea to be of practical significance and politically acceptable.

One complication in defining security guarantees relates to maintaining them during a dual crisis involving both the Korean peninsula and the Taiwan Strait. Many decision-makers and experts, especially in South Korea, fear that China and North Korea could exploit a crisis in one theatre to their advantage in another, exploiting the fact that the US or its allies may be too compromised or distracted. Maintaining guarantees under these changing conditions can be especially challenging.

The US nuclear umbrella: a sufficient guarantee?

The alliance between the United States, South Korea and Japan is a decisive factor for stability on the Korean peninsula. This has been possible mainly due to US extended deterrence. Annual military exercises and force projection have become an essential part of extended deterrence, which demonstrates joint capabilities and readiness to respond forcefully to North Korean aggression. However, US extended deterrence presents its own problems and limitations: its failure to deter North Korea's hostile military provocations has damaged the credibility underpinning extended deterrence.

Another problem that has been glimpsed in the alliance is the growing lack of trust and confidence *vis-à-vis* the deterrence guarantor and South Korea and Japan. It is not easy for the nuclear supplier to secure the customer in an asymmetric alliance framework. Asymmetric alliance relationships may involve divergent threat perceptions. Such divergent threat perceptions may give rise to fears of entrapment or abandonment (Snyder, 1984: 461-465). Given that South Korea is constrained by North Korea, it is inevitably concerned about the latter's rapid nuclear build-up. In addition to geographical proximity, threat perceptions may differ greatly due to the confrontation between the US and China-Russia. Amid the strategic competition between the US and China, and the Russian invasion of Ukraine, the Biden administration's main security concerns were China and Russia, not North Korea. Washington and Seoul must strive to close the security perception gap and rebuild mutual trust within the alliance and extended deterrence against North Korea.

A nuclear South Korea?

South Korea's position on pre-emptive strikes against North Korea undermines the credibility of its policy. Under current South Korean doctrine, it will use locally produced capabilities to conduct pre-emptive strikes if it detects signs of a North Korean missile launch and will follow any successful attack on South Korea with "massive punishment and retaliation". However, there is uncertainty about Seoul's operational capability to correctly identify an imminent attack and therefore respond appropriately (Bowers and Hiim, 2021): 7-39). Moreover, careless statements by some South Korean politicians about decapitation attacks on Kim Jong-un and the North Korean leadership have

introduced significant ambiguity regarding the conditions that may trigger a South Korean attack on North Korea.

All this leads to the debate that has emerged in South Korea, remarkably, on acquiring an independent nuclear deterrent. If North Korea raises its nuclear threats and continues its policy of playing on the brink of nuclear war, South Korea may strategically opt to acquire its own nuclear force to maintain a balance of terror on the Korean peninsula. President Yoon has openly floated the idea, even if he later retracted it, and several prominent politicians have expressed support for the possibility of South Korea developing a nuclear bomb of its own. Another indication of Seoul's nuclear reserves is its development of submarine-launched ballistic missile capabilities, as the only non-nuclear armed state to have done so. Likewise, following the AUKUS agreement, there has been renewed support for the development of an indigenous nuclear-powered submarine among South Korean experts and officials (Chang, 2023). Proponents of a South Korean nuclear deterrent also argue that its independent nuclear capabilities can enhance Seoul's value and prestige as a US alliance partner. However, others see South Korea's "nuclear standby" approach as a negotiating tactic to obtain more security assurances from Washington.

Still, the nuclear debate in South Korea clearly indicates that some South Koreans do not see their (or the United States') non-nuclear capabilities as strategic assets. Many in Seoul believe that an effective deterrence posture must be based on the possession of nuclear weapons and, to avoid this, it is essential to take steps to ensure that Seoul does not decide to build its own nuclear arsenal. In the short term, this will require enhancing the extended deterrence posture of the US and South Korea in line with the strengthening of the so-called three Cs (capability, credibility and communication) as well as security assurance, a measure that will, in turn, strengthen the principle of extended deterrence. Other measures to be taken include enhancing balanced conventional and nuclear deterrence and defence, reinforcing joint military preparedness in alignment with North Korea's advanced nuclear posture, strengthening security assurance measures corresponding to the existential threat posed by North Korea, and promoting the application of extended deterrence at the military level.

Towards a nuclear-weapon-free zone in Northeast Asia?

One possible solution to all tensions and problems discussed in this section may be the formalisation by treaty of a Northeast Asian NWFZ. Indeed, in the past, this region was considered a candidate for the creation of such a zone since its nuclear proliferation has traditionally posed a risk to international security. The challenge, however, in creating a NWFZ is that the very concept of Northeast Asia is controversial because the states parties are either associated with different sub-regions or belong to the broader continent of Asia. At the same time, compared to other regions where NWFZs have been established, the development of a sense of regionalism in Northeast Asia is very weak. Regional organisations overlap and constitute an area of competition between China and Japan. However, despite conflicts, tensions and low institutionalisation in the region, its interdependence has continued to grow over the years and there are hundreds of cooperation projects ongoing (Wan, 2018).

On the other hand, a NWFZ would consist of multiple actors with diverse visions of nuclear weapons. South Korea and Japan are nuclear threshold states; North Korea is a state with nuclear weapons that withdrew from the NPT and China is a state with nuclear weapons that is part of the P5. US, Russia and China, (together with the other two states that possess nuclear weapons and which are recognised by the NPT) must provide negative security guarantees to the countries of a potential NWFZ in Northeast Asia. However, China's place in the region and its role as North Korea's patron makes it one of the actors that would negotiate such a NWFZ. In other words, China's role would extend beyond providing negative security guarantees.

In this sense, the main stumbling block to the creation of a NWFZ in the region would not be North Korea, rather China. There are several reasons for this: China's regional security requirements do not seem to be advanced by a NWFZ as the regional security scenario is favourable to its interests. China's regional power is growing and will not be challenged by other regional powers. This means that South Korea and Japan will continue to base their security on the US security umbrella. On the other hand, the negative security guarantees that China would have to commit to, would require an understanding between Russia, China and the US. This does not seem achievable in the short term. Another barrier to the development of a NWFZ from the Chinese perspective is the potential nuclearisation of Japan or South Korea. Finally, while a NWFZ in Northeast Asia will not

change China's nuclear status, it may impose some constraints on its missile deployment. Despite there being few incentives for China to support the creation of a NWFZ, China was the main supporter of the six-party talks in the past and remains its primary advocate (Wan, 2018). This means that rather than an NFWZ, from China's perspective, the denuclearisation of the Korean peninsula appears to be the preferable security arrangement for the region.

Moreover, the main actors lack a common vision of what collective security in Northeast Asia should be, which would limit the possibilities of creating a NWFZ in the region. First, Japan and South Korea have committed to maintaining their denuclearised status despite North Korea's threats. However, they continue to rely on the US nuclear umbrella for their defence and there are currently no relevant actors at the national level to suggest an end to this support. Second, the US is reluctant to consider a NWFZ because its influence would be reduced if the nuclear umbrella provided to South Korea and Japan were to be removed (Koo, 1998: 123-139). Third, Japan and South Korea's status as nuclear threshold states would be hampered by a NWFZ, as it would restrict much of their nuclear development related to fuel cycle and reprocessing technologies (Koo, 1998: 123-139). Fourth, as highlighted above, China is not eager to establish a NWFZ, as its nuclear strategy towards its immediate neighbourhood would be affected (Koo, 1998: 123-139). Fifth, North Korea's nuclear trajectory does not appear to be reversing, and without a disarmed North Korea, a NWFZ cannot be achieved. Sixth, Northeast Asian countries have so far not been advocates of multilateral security (Cha, 2014: 737-757), as they have not invested in building regional security architectures in fields other than arms control. Instead, they have chosen to address security issues through the lens of security self-reliance and, in the case of Japan and South Korea, allying with the United States. Finally, the lack of official dialogue on a NWFZ in Northeast Asia impedes any possibility of progress on this issue (Wan, 2018).

The strategic nuclear trilemma: China, India and Pakistan - a delicate balance

The overall picture of nuclear issues in South Asia is characterised by great complexity: three nuclear powers share a direct border and have unresolved territorial disputes. There is also an asymmetry between conventional and nuclear capabilities and precedents of open

warfare between the parties. Moreover, their diverging perspectives on how to establish deterrence; nuclear dyads extending into strategic chains; the interconnectedness of nuclear issues with the conventional, space and cyber domains; historical animosities; and the divisions engendered by ideologies, religions and civilisational issues make for a very complex situation where all elements for a possible uncontrolled nuclear escalation are in place.

Factors accentuating the conflict in this area are the issues of Kashmir, Aksai Chin and Arunachal Pradesh; Pakistan's instrumentalisation of terrorism; the meddling of major powers in regional politics (especially the US and Russia); and perceptions of the intentions of adversaries. Consequently, nuclear dynamics in South Asia are quite challenging as the deterrence relationship between the involved parties is not bi-directional, as was the case of the US and the Soviet Union during the Cold War. At the same time, the region is being drawn into bloc politics that are conditioned by the strategic rivalry between the United States and China, with Islamabad emerging as Beijing's ally and New Delhi as Washington's. This complicates the distribution of deterrence amongst the various regional nuclear powers in a responsible and credible manner.

Moreover, as noted above, the role of perceptions is key to understanding current developments in South Asia. In this sense, there is an asymmetry of perceptions regarding the nuclear issue amongst regional powers. Pakistan perceives India's nuclear capabilities as a tool of blackmail and an existential threat to its survival. Pakistan's tactical nuclear weapons influence India's perceptions of Pakistan's readiness to deploy nuclear weapons in conflict. India also perceives a threat on two fronts from the strategic military alliance between China and Pakistan. In turn, China perceives the United States' role in the Indo-Pacific as part of a strategy to contain China, of which India is an indispensable part. Added to all this is the fact that there is an absence of talks among the South Asian nuclear powers, which also leads to a general lack of shared danger perception.

Finally, internal factors and leadership policy can both incentivise and limit risky behaviours. The short-term risks of escalation are high in the event of domestic instability. Three elements of the domestic environment are common to India, China and Pakistan: the first is nationalism and a sense of national pride, the second is a focus on hard power

and military build-up, and the third is a low level of understanding within the public and political leaders of the consequences of a breakdown in deterrence.

Nuclear deterrence in South Asia

The triangular relationship between China, India and Pakistan has led to the formation of the nuclear dyads India-Pakistan and India-China. The third nuclear dyad, Pakistan-China, exists as a strategic partnership with extensive cooperation in nuclear and missile capabilities (Paul, 2023: 21-29). India's nuclear threats emerge from both sides of its border. For Pakistan, India is the only nuclear threat. Meanwhile, Chinese strategic calculations prioritise the United States. The nature of nuclear dynamics therefore is manifested in a complex nuclear chain that actually includes four states (Einhorn and Sidhu, 2017).

The result is a cascading security dilemma that disrupts regional strategic stability and increases the risk that crises may cross the nuclear threshold. In addition to the general dynamics of the arms race, the introduction of new munitions, more capable delivery vehicles and potentially more risk-prone doctrinal changes generally tend to exacerbate strategic instability in South Asia. Sophisticated missile defence systems, hypersonic missiles and multiple independently targetable re-entry vehicles, as well as tactical, sea-based (surface and submarine) and dual-capable nuclear systems, present new challenges for crisis management and raise questions about how they may influence the nuclear strategies and doctrines of states in the region.

India's dual deterrence challenges vis-à-vis China and Pakistan highlight another example of a multipolar nuclear risk. For example, India faces the task of designing a force structure that can deter both what it perceives as an offensively oriented Pakistan - which relies on a low-threshold first-use nuclear strategy - and China positioning itself to secure retaliation backed by a no-first-use policy[7]. These tasks seem irreconcilable for India, where decision-makers may feel they must size their force to take into account deterrence requirements vis-à-vis China, even if this exacerbates Pakistan's threat perceptions. In this sense, India is establishing its deterrence on the basis of a publicly articulated nuclear doctrine that provides a considerable amount of transparency about

[7] Few Indian strategists take China's "no first use" policy at face value.

the role, nature of capability build-up, usage scenarios and deployment postures of its nuclear capability. India believes that doctrinal clarity may be an asset in terms of reducing false perceptions and avoiding instability in crises or arms races.

In contrast to China and India, for Pakistan, the atomic bomb is an instrument of conventional deterrence towards India. Consequently, this signals a low nuclear threshold and derives deterrence by spreading the nuclear weapon for "total defence" with the aim of deterring both nuclear and conventional attacks, as well as counterforce and counter-value targets. To make these full-spectrum threats appear credible, Pakistan has embraced the concept of full-spectrum deterrence and invests in the capabilities needed to carry it out (Khan, 2016: 109-153). Pakistan prefers to project the first use of nuclear weapons, including the use of tactical nuclear weapons, to deter India. It pursues a strategy of *brinkmanship* to deter conventional Indian military action in response to acts of terrorism. Pakistan likes to highlight the risk of nuclear escalation to increase deterrence (Sethi, 2013; Gregory, 2011; Hundley, 2012). The prospect of the conflict escalating to the nuclear level is meant to evoke fear not only to deter India, but also to scare international society into becoming involved in the resolution of any regional conflict. Thus, as some have suggested, Pakistan does not desire nuclear stability, rather managed instability (Hundley, 2012).

China, for its part, has traditionally used opacity to enhance its nuclear deterrence. It has preferred to conceal its nuclear numbers and capabilities and thus establish deterrence. More recently, however, China has not hesitated to demonstrate its capabilities, as it now bases its deterrence on ambiguity. Given the threat it perceives from the United States' ballistic missile defence and the possible use of long-range strategic missiles with conventional warheads to degrade its nuclear arsenal, China has deemed it prudent to deploy dual-use delivery systems and mix its conventional and nuclear forces at the same base to increase the risk of "nuclear entanglement" (Acton, 2018: 56-99). In doing so, it seeks to deter the US by increasing the risk that the latter may inadvertently attack sites where both asset types are held, which could be perceived as a nuclear attack, leading to nuclear escalation. The uncertainty generated is meant to enhance deterrence.

Nuclear capabilities in South Asia

Interestingly, while the concept of minimum credible deterrence has been associated with all three countries, each has interpreted it differently. For example, Beijing held true to this description for many decades, as the number of its nuclear warheads was believed to remain under two hundred and fifty between 1990 and 2010. However, in the last decade, nuclear modernisation programmes have accelerated in pace and variety, including the construction of new silos indicating a possible increase in the number of warheads (Kristensen and Korda, 2021a; US Department of Defence, 2020); the commissioning of new Jin-class nuclear submarines; the deployment of independently steerable multiple re-entry vehicles and perhaps manoeuvrable warheads on their missiles; dual-use cruise missiles; hypersonic missile research and development; and the increasing use of space-based capabilities to enhance intelligence, surveillance and reconnaissance (ISR). It is unclear as to what extent these developments will move China away from its long-term strategy of minimum deterrence. Having been satisfied with "minimal means of retaliation" for a long time, it is now displaying signs of change.

It is estimated that India has built up an arsenal of between one hundred and fifty and one hundred and sixty nuclear warheads in the last twenty-four years. An effort has been made to test and incorporate variable range missiles and move towards dispersing delivery platforms across the nuclear triad. According to India's nuclear doctrine, the country must develop sufficient nuclear forces -which can survive a first strike and are operationally ready- a robust command and control system, effective intelligence and early warning capabilities to ensure maximum credibility and survivability. Survival is emphasised through a combination of multiple redundant systems, mobility, dispersal and deception. India has been moving forward according to this plan to build a credible arsenal and set of capabilities needed to fulfil its concept of minimum credible deterrence.

Pakistan, for its part, with an estimated arsenal of one hundred and sixty-five nuclear warheads, has begun to describe its strategy as one of full-spectrum deterrence (Kristensen and Korda, 2021b: 265-278). This seems to place importance on building a ready arsenal of nuclear warheads ranging from low-yield to high-yield, as well as a range of delivery systems from very short-range to longer-range, in order to strike the entire Indian territory. In recent years, missile tests have been conducted with new technologies, such as multiple re-entry vehicles (commonly known as MIRV) and independent missiles

from underwater platforms (Ababeel) and longer-range cruise missiles (Babur 1B). It has also announced the sea-based deployment of missiles with nuclear warheads on surface ships and diesel-electric submarines, ostensibly for a sea-based deterrent.

Nuclear command and control in South Asia

With regard to its command and control systems, on 2nd February 2000, Pakistan announced the creation of its nuclear command organisation, consisting of the National Command Authority, the Strategic Plans Division and three strategic service commands, one for each branch: Army, Navy and Air Force. The military has always been the main decision-maker in nuclear matters and its predominance is also reflected in nuclear command and control structures. Pakistan claims to have a two-man system for authorising the use of nuclear weapons. It maintains that it has an assertive system without delegation of control, although this contradicts the value of possessing tactical nuclear weapons, which are effective only with delegation of control for nuclear use. On the other hand, Pakistan is not yet credited with a sophisticated early warning system.

In the case of China, its nuclear forces have a highly centralised, redundant and networked command and control system for its nuclear forces. The structure has recently been reorganised as part of a major military overhaul announced by President Xi in 2015. Under this process, the PLARF has become the fourth arm of the PLA, alongside the Army, Navy and Air Force. It remains under the direct command of the Central Military Commission, the highest and most centralised level of military leadership in the Chinese Communist Party. The PLARF commander is also believed to be a member of the Central Military Commission. PLARF orders are believed to be encrypted and protected and require human authentication. There is an emphasis on there being a "man in the loop" for nuclear launch orders and, in that sense, command and control does not exist as a fully automated system. Additionally, the PLARF has control over both conventional and nuclear missiles. China is also known to be building an early warning system with Russian assistance (Korolev, 2020) and has indicated an apparent focus on keeping nuclear forces in a more operational state, as also indicated in the 2019 National Defence White Paper.

India's nuclear doctrine, as set out in a January 2003 press release, mandates the creation of the Nuclear Command Authority, comprising a policy council and an executive council. The former is chaired by the prime minister and is the only body that can authorise nuclear use. The Executive Council is chaired by the National Security Adviser and provides input to the Political Council, as well as executing the directives it receives from the Political Council. The Commander-in-Chief of the Strategic Forces Command manages and administers the national nuclear forces and is responsible for training and other operational issues related to the use of nuclear weapons. The responsibility for the safe storage and reliability of nuclear warheads rests with the Department of Atomic Energy, while delivery vehicles are maintained and controlled by the Armed Forces. A national command post, including an alternate command post, is planned to ensure the survivability and certainty of retaliatory signals.

Confidence-building measures, the way forward

As may be seen, more confidence building measures must be developed among the three parties, even if none of them agree with the other on what form and substance these measures should take. In terms of policy recommendations, these include steps that may contribute to reducing nuclear risk, promoting stability in times of crisis and thus helping to build confidence and reduce tensions.

Initiating trilateral strategic dialogues to better understand each side's threat perceptions is an important step. From a political point of view, an exchange of views or even the exchange of unofficial documents at an appropriate level may be the easiest first step, as it would not imply any compromise or agreement regarding capability constraints. However, this could be useful in reducing false perceptions. In relation to this, the use of political and military hotlines, or improved use where such lines already exist, may be established for crisis management. Such arrangements may be useful in addressing the problem of inadvertent escalation, especially when faced with a strategy of *brinkmanship* or ambiguity that may spiral out of control.

Another possible measure could be to formalise low alert levels, as stockpiles in China, India and Pakistan are in such a state. Although it appears difficult, this step may be explored at the *Track II* level among experts. Should some understanding be reached on

how to create acceptable verification mechanisms for this, it may be a highly significant step towards stability in times of crisis, especially once new technologies such as hypersonics reduce response times. In this matter, China's approach would be key, as it must also take into account US developments. Indeed, there are fears that it may be forced to alter its own force posture towards greater preparedness (Kulacki, 2019).

Another way to create a habit of engagement and dialogue may be to start with something less intrusive in terms of national security, such as sharing best practices on nuclear safety and security related to civil nuclear facilities. As nuclear energy programmes are expanding in all three countries, it may be useful to promote collaboration between their nuclear centres of excellence. Promoting joint ventures in the manufacture of radiation detection equipment could help foster a common culture of safety and security for the region, which could then be expanded to other areas.

In another possible initiative, the political leadership, as well as the population of the three countries, may be sufficiently educated or made aware of the nature of nuclear weapons and the risks of a breakdown of deterrence. As it currently stands, the discussion on nuclear weapons in all three countries is framed by their profound role in national security. However, it is also important to understand the limitations of these weapons. For example, despite possessing nuclear weapons, India has had to endure acts of terrorism by Pakistan and border incursions by China. Nuclear weapons are not the answer to every security threat. Therefore, other types of capability build-up and political commitment become necessary complements to nuclear capability. During the Cold War, regular drills, nuclear alarms and exercises kept the population aware of the possibility of nuclear war. This also gave rise to a civil society movement pushing for measures to reduce nuclear risks. Such a phenomenon has never been experienced in South Asia. In fact, there is very little understanding of the dangers of nuclear use among the general population, as well as among political leaders. To better manage crises between nuclear states in the region, policymakers should therefore be trained in complex nuclear crisis diplomacy by conducting simulation exercises within the intelligence community, developing a generalised policy manual for the India-Pakistan and India-China crises, and India-Pakistan-China overlapping crises, as well as routinely sharing knowledge from these planning documents. Moreover, countries in the region should work to improve their indicators and warnings for regional crises and prepare to share information publicly and

with other regional actors to combat disinformation where doing so could prevent or de-escalate conflict. A better understanding of the above could lead to a willingness to invest in negotiations to resolve the trilemma, either through more specific risk reduction measures or broader conflict resolution efforts that target the drivers of conflict.

Finally, it may be suggested that the answer to the region's nuclear complexities might also lie in fostering cooperation in non-nuclear areas. These three countries share common concerns and suffer the consequences of climate change, health emergencies due to pandemics, locust invasions in the summer months, and tensions over access to river basins. There is room here for the three to explore certain collective solutions. Until the time that a shared understanding of nuclear risks is established, habits of cooperation on other, less dominant security issues may be formed.

With regard to purely bilateral recommendations, there is an urgent need to resume political and military dialogue between India and Pakistan to avoid possible escalation or a new war between the two countries. Moreover, India and China should include the nuclear issue as part of their bilateral strategic dialogue in order to generate a mutual understanding of shared risks and dangers. All of this could be handled through *Track 1.5* or *Track II* diplomacy [8]. One step that may be achieved between India and China would be to formalise a bilateral non-first use treaty. Currently, these two nations are the only advocates of such a doctrine. Its merit as a stabilising doctrine has been evident during the last military confrontation in 2020, as they did not brandish their nuclear weapons. Mutual acceptance of a no-first-use policy would also have the potential to reassure the adversary and decrease the chances of false nuclear perceptions and inadvertent escalation. Indeed, the policy makes even more sense when faced with an adversary with a small nuclear arsenal that is likely to be extremely sensitive to its survival. India and China have at different times proposed a multilateral no-first-use treaty. Until this gains more support, it might be useful to at least convert their unilateral statements into a bilateral agreement.

[8] *Track II* diplomacy is the practice by which non-state actors use conflict resolution tactics such as workshops and talks to de-escalate tension or fear between conflicting groups. These non-governmental, informal and unofficial contacts organise activities to improve communication and understanding between citizens.

AUKUS: a covert proliferation risk

The United States has decided to boost its presence in the Indo-Pacific. This has been demonstrated by the renewal of the Quadrilateral Security Dialogue (QSD), but above all by the formalisation of AUKUS together with the United Kingdom and Australia. The agreement aims to strengthen the capacity of all three partners to ensure shared security and defence interests.

Phase I of the agreement includes providing assistance to Australia in building nuclear-powered submarines. To this end, the United States and the United Kingdom will soon establish capabilities and infrastructure, including training for crews, engineers and maintenance personnel. However, preparing a country to handle such sophisticated and sensitive technology should not be considered an ordinary task. Concerns have been raised, even within Australia, about how a country without a civil nuclear power programme could suddenly start operating nuclear-powered submarines. Indeed, a country must first be aware of the controlled and responsible handling of radioactive materials such as highly enriched uranium (HEU) to ensure that there is no diversion of nuclear material and technology that could be used for military purposes not foreseen in the IAEA safeguards agreement.

For its part, China has criticised the AUKUS, calling it a "return of the Cold War mentality" (Ministry of Foreign Affairs of the People's Republic of China, 2022). Beijing sees the AUKUS as a direct threat and an attempt by the United States to contain its freedom of action in the Indo-Pacific. China's response is loud and clear: it has claimed that the US, UK and Australia are creating a new military bloc by establishing AUKUS, which has exacerbated geopolitical tensions (Permanent Mission of the People's Republic of China to the United Nations and Other International Organisations in Vienna, 2021):

> "China maintains that, pending a proper formula worked out by Member States of the Agency through consensus, the United States, the United Kingdom and Australia should not go ahead with their nuclear submarine cooperation under AUKUS, whereas the secretariat of the IAEA, for its part, should not proceed on its own to negotiate the relevant safeguards arrangement with the three countries".

This was stated by Chinese Ambassador Wang Qun. China has also called on the AUKUS parties to recommit to nuclear non-proliferation obligations (Permanent Mission of the People's Republic of China to the United Nations and other international bodies in Vienna, 2021).

The creation of AUKUS allows the United States to regain a significant presence in Asia. Washington is strengthening its commitment to its regional allies, as well as its presence to contain Chinese expansion. In this sense, AUKUS complements the objective of the QSD, as it contributes to the free and open trade in the Indo-Pacific, shifting the military balance away from China. Thus, many states in the region, most notably Japan which feels threatened by China's military presence and naval expansion, have welcomed AUKUS as well as the QSD.

However, these initiatives have serious implications for the region. The United States is manoeuvring aggressively in the Indo-Pacific towards an irreversible political and military confrontation that increases the risk of war by encouraging its allies to advance their offensive military capabilities. This also disrupts regional stability and harmony: by portraying China as a threat to the region similar to North Korea (Lenon, 2018), Washington is projecting Beijing as “offensive” in its economic and military policies and deepening rivalry. However, by focusing only on militarisation, the United States is overlooking the economic hegemonic status that China has already acquired and which is an undeniable fact for the world and unavoidable for the region. This is, for example, one of the main points raised by the ASEAN countries: Indonesia and Malaysia have expressed concern regarding the geopolitical upheaval that Australia's acquisition of a nuclear-powered submarine fleet would entail, while Australia's closest ally Singapore has shown concern, though it has not exerted as much pressure (Patti Djalal, 2021). Vietnam and the Philippines appear to welcome the move and see it as ensuring strategic balance in the region (Patti Djalal, 2021). It is likely that the agreement will sow greater long-term disunity in the heart of ASEAN and encourage the member states to side with either the US or China. The other less likely incident may be the uncertainty surrounding Australia’s use of this maximisation of military power in its relations with regional states.

Moreover, the creation of AUKUS has revealed that Washington prefers one ally over the other. Citing the nuclear non-proliferation regime as the main reason, the Trump administration declined South Korea's request to transfer technology and HEU for its potential nuclear-powered submarine fleet (Park, 2023: 1-22), while the Biden administration made an exception for Australia, which undermines the same non-proliferation commitment. Secondly, while the same administration emphasised strengthening the US alliance system, the development of AUKUS shows that the UK and Australia must be more important allies for the United States than France. Preferring some allies over others is not a concern, unless one alliance becomes the cause of deterioration in the others. If history is anything to go by, it is clear that the US has continued to shift its preferences from one ally to another according to its national interests.

As a result, however, Australia is likely to lose its neutrality in terms of its foreign policy[9], while opening itself up to tension and conflict with China. Indeed, there is a large trust gap in the Australia-China relationship. Some Australian experts go so far as to suggest that Beijing's attempts to stabilise relations with Australia are a ruse aimed at exploiting Australian goodwill at a later date. Australian officials argue that the strategic impact of AUKUS is negligible compared to the implications of China's nuclear arsenal build-up. From the Chinese perspective, however, AUKUS has generated a great deal of diplomatic resignation. Additionally, AUKUS has complicated Australia's efforts to lead on nuclear security and risk reduction issues in forums such as the IAEA and the NPT.

Finally, Washington is already interested in further expanding AUKUS. In an interview with the Lowy Institute, Kurt Campbell, the National Security Council's Indo-Pacific coordinator, referred to AUKUS as "an open architecture... that other countries could join over time". According to Campbell, AUKUS will serve as a platform through which the United States seeks to work with "like-minded states in key areas of military innovation". Jake Sullivan, the US National Security Advisor, also presented an ambitious vision for AUKUS, which could include promoting shared security and strengthening technological, economic and climate cooperation in the Indo-Pacific region (Tan, 2022: 1-4). These

[9] Neutrality must not be understood as a political and legal- status with a defined content in international law; this is international relations, not law. In this sense, it should be understood as Australia's attempt to maintain a position of possible and potential political benefits, in accordance with its own perceived interests in developing its bilateral relations with the United States and China respectively.

comments suggest that AUKUS could become a non-exclusive initiative that "complements, rather than contradicts, existing regional architecture and standards" (Tan, 2022: 1-4).

Implications of AUKUS for Australia

Australia is making rapid progress in acquiring long-range weapons. Former Defence Minister Richard Marles has used the term "impactful projection" to describe Australia's future long-range strike doctrine, which he defined as "an ability to hold an adversary at risk, much further from our shores, across kind of the full spectrum of proportionate response" (Australian Government, 2022). The nuclear-powered submarines to be procured through AUKUS are one of Australia's top investment priorities for this purpose. As Canberra's *2023 Defence Strategic Review* points out: "Nuclear-powered submarines are key assets both in effecting a strategy of denial and in the provision of anti-submarine warfare and long-range strike options" (Australian Department of Defence, 2023).

Other important AUKUS investment priorities include Australia's acquisition of more than 200 Tomahawk missiles from the United States and an accelerated programme to manufacture guided missiles in South Australia (in part to help expand the US military-industrial base in the Indo-Pacific region) by 2025. Long before the AUKUS pact was announced, Australia and the United States had been cooperating to develop and test air-launched hypersonic weapons on Australian territory (Royal Australian Air Force, 2023). Experts at the Australian Strategic Policy Institute have speculated on whether Australia should also acquire other US-made long-range capabilities, including the B-21 strategic bomber. Such weapons could potentially play roles beyond those required by the deterrence-by-denial posture implicit in official Australian statements (Hellyer and Nicholls, 2022).

The political community is aware that the agreement is “a big Australian bet on the future of the United States, and at a more uncertain time in American politics than at almost any point in the history of the alliance” (Gyngell, 2021). Uncertain geostrategic impacts on Australia may also mean that the AUKUS implementation may not be as smooth as many policymakers hope. Despite this, the agreement on nuclear-powered submarines may, in fact, generate dynamics similar to a regional arms race. It is also unclear how the details

of cooperation in so many areas will unfold between the three countries. It is nevertheless possible that, over time and with the attractiveness of various proposals for partnership with other parties, more and more states will realise the usefulness of this security pact.

One way to assess the long-term implications of AUKUS for the Indo-Pacific region is to look at how Australia has employed it as an instrument to address the rise of China: Despite numerous positive assessments of its usefulness as a strategic tool, AUKUS has not been without its critics, both in Australia and elsewhere in the world. Firstly, AUKUS represents the strategic intention of the United States to work with its allies to strengthen its military balance vis-à-vis China. Through AUKUS, Australia has become a strong participant in the strategic game of the US. (Kapur, 2021: 1-17). Given the economic interdependence between Australia and China, Australia's open economy could become even more vulnerable to great power geopolitics. According to one analyst, “security arrangements like the recent Australia-UK-US (AUKUS) Pact will become an economic straitjacket” (Westland, 2021).

Some analysts argue that AUKUS may not be directly relevant to the defence of Australia's domestic territory. According to these sceptics, Australia's security and defence might be better served by a fleet of smaller conventional submarines, given that Australia enjoys a number of geographical advantages. Two questions remain unanswered or only partially answered: Why does Australia need these long-range submarines to operate in the South and East China Seas, and what strategic objectives can Australia achieve by harnessing these submarines? It is also doubtful whether Australia, as a relatively minor power, has the material strength to aspire to a naval force across three oceans. If Australia's intention is to use this new naval capability to help shape a rules-based order in the region, there are many other means to achieve that goal. Other observers have argued that Australia's acquisition of the nuclear-powered submarine fleet could take a long time, perhaps almost two decades. By then, it would be too late for Canberra to play a significant naval role in a Taiwan contingency.

On the other hand, it is very likely that Australia will need to outsource the operation of submarines to the US Navy, at the expense of its sovereignty (Wyeth, 2022). It is also argued that by the time Australia obtains the nuclear-powered submarines, China's anti-submarine capabilities may have advanced to the point where Australian submarines could be vulnerable in waters close to China's coast. Operationally, during peacetime,

Australian submarines are likely to need air cover from the US carrier task force. In a war between the US and China, it is likely that the Australian Defence Force would be integrated into the US military force. Thus, Australia would inevitably become a party to a war with China. If it becomes involved in a military confrontation between two nuclear-armed great powers, its national security would be at great risk. These strategic implications and technical difficulties suggest that the deterrence granted to AUKUS against China may be limited.

Implications of AUKUS for the nuclear non-proliferation regime

With regard to the implications of AUKUS for the nuclear non-proliferation regime, this represents a dangerous precedent. Since the joint statement on AUKUS, an intense debate has raged over whether nuclear-powered submarines are damaging the spirit of the NPT or whether this is just another criticism. For example, AUKUS is seen as a nuclear proliferation risk because of the issue of nuclear propulsion technology transfer which, although not a direct propagation of nuclear weapons, represents a sensitive issue related to the spread of nuclear materials and technologies.

It is true that making Australia the first non-nuclear-weapon state to receive HEU for the building of nuclear-powered submarines sets a negative precedent[10]. This has weakened the non-transfer obligation under Article I of the NPT at the global level. Detractors of AUKUS argue that naval reactor technology and related materials used to power nuclear submarines are not covered by IAEA safeguards[11]. In other words, the HEU used to power nuclear submarines is exempt from the IAEA inspections required by the treaty (Kibe and Akagawa, 2021). This in itself reveals another loophole in the Safeguards Agreement (Acton, 2021).

Sharing HEU for submarine propulsion continues to be a violation of the NPT by its biggest supporter, the United States. This leaves the world concerned, even if Australia

[10] It should be noted that while Australia will be able to build nuclear-powered submarines with the assistance of the United States and the United Kingdom, its reactors will be sealed. Therefore, the reactors will not have to be opened for the lifetime of the submarine. This is one of the arguments put forward by the parties to show that there would be no violation of the NPT in this case.

[11] Article 14 of the safeguards agreement between the IAEA and non-nuclear weapon states allows nuclear material to be excluded from the agency's inspection system or process and used in a non-proscribed military activity, such as nuclear propulsion of submarines. Only while the nuclear material is in use in such an activity, do the safeguards under the agreement not apply. In the specific case of Australia, it is recommended to consult INFCIRC/217.

assures the world that it will not seek to develop nuclear weapons. But who can guarantee that Australia will not change its mind in the future and begin accumulating weapons-grade uranium for other purposes? How could other countries be prevented from acquiring or producing HEU using the same excuse of powering their nuclear submarines? How would the strategic dynamics change if Japan and South Korea decided to follow suit? One option to address growing proliferation concerns is for the US and UK to ensure that Australia's nuclear submarines use low-enriched uranium (LEU) rather than HEU, since it cannot be used directly as weapons-grade material (Acton, 2021)[12].

It therefore poses a challenge for Australia: to seriously address the concerns expressed by some countries regarding nuclear proliferation risks. In this context, it is up to Australia to establish and comply with additional, more stringent measures for the production, use and disposal of HEU, as required by the IAEA and the NPT. What follows is that Australia, as a non-nuclear-weapon state, will have to make a special inspection arrangement with the IAEA (Wyeth, 2022), and negotiations have commenced in this regard.

China registered a strong protest with the Agency, stating that it would be wrong and dangerous to "support the nuclear proliferation acts of these three countries" (Liu, 2022). While it is unlikely that China will seek to form new alliances in the foreseeable future, Beijing might be tempted to enter into AUKUS-type relations with certain countries in the region, for example North Korea, given that AUKUS has removed restrictions on China doing so.

Conclusions

As this chapter has shown, the Indo-Pacific nuclear lanscape is characterised by multiple actors and a web of complex strategic relationships, where the accumulation of nuclear capabilities and regional tensions represent a significant threat to regional and international security. In this sense, one can glimpse the consolidation of a bloc politics where the United States, India, Australia, Japan and South Korea agree that China is the most important challenge as it attempts to rewrite the regional order in its own image.

[12] The Brazilian PROSUB programme for a nuclear-powered submarine based on French technology raises certain similar as well as divergent issues (Garay Vera and Pérez Gil, 2014).

This, in turn, has direct implications for the deterrence strategies of these actors, who are finding it necessary to build collective deterrence and defence to confront the Chinese threat. However, they do not all view these threats in the same manner, which makes building collective deterrence and defence an arduous task, since the five countries fail to agree on how this should be done. Thus, within a context of growing geopolitical rivalries and asymmetric nuclear deterrence, the risks of unintended escalation or miscalculation are high. The situation on the Korean peninsula, the Taiwan Strait and relations between China, India and Pakistan are points of risk that must be managed with containment policies and effective communication.

To mitigate these risks, it is critical that Indo-Pacific countries adopt approaches that promote long-term stability and peace through increased communication and cooperation, including the creation of political and military hotlines that may reduce the risks of inadvertent escalation. Establishing crisis communication protocols in sensitive areas such as Northeast Asia or South Asia would allow for a controlled response to potential conflicts and improve transparency. A precursor to this could be for countries such as China, India and Pakistan to orient their nuclear arsenals towards minimum and transparent deterrence, avoiding the development of first-use or offensive capabilities. A focus on credible minimum deterrence would better manage threat perceptions and reduce the risk of nuclear escalation.

The creation of a NWFZ in Northeast Asia would also help to reduce the nuclear threat by restricting the deployment of nuclear weapons in this territory. However, for these initiatives to succeed, active engagement by nuclear powers such as China and the United States is necessary to ensure the security of participating nations and to build a consensus to promote the progressive denuclearisation of the Korean peninsula. Indeed, given North Korea's unpredictability, engagement policies that combine sanctions with diplomatic incentives are required and the resumption of multilateral dialogues within an inclusive framework can help reduce tensions on the peninsula, thus moving towards its eventual denuclearisation.

Moreover, alliances such as the Quadrilateral Security Dialogue and AUKUS must consider the impacts of their deterrence strategies on regional stability. Instead of purely defensive approaches, these alliances could prioritise measures to foster a strategic

balance based on mutual respect and dialogue, which would minimise threat perceptions among their members and other powers in the region.

Finally, the Indo-Pacific, with its deep economic interdependencies and historical rivalries, represents both a challenge and an opportunity for the development of a cooperative security system. Adopting these approaches would help to promote a sustainable strategic balance, and it is only through confidence-building, communication and engagement that Indo-Pacific states can build a lasting stability that will deter the nuclear threat and foster peace in the region.

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