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RISING TIDES OF DETERRENCE: EMERGING DYNAMICS OF THE GLOBAL NUCLEAR ARMS RACE AND STRATEGIC SHIFTS IN SOUTH ASIA

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ABSTRACT

The changes in South Asia's strategies are what this study is mostly about as the global nu- clear arms race gets more intense. The study question is about how changes in doctrine, new technologies, and competition between big powers are affecting the level of security that serves as a deterrent, especially between China, India, and Pakistan. The goal is to figure out how these events affect safety in the area and around the world. Some of the goals are to evaluate the trends of nuclear modernization, guess where possible flashpoints might happen, and change the theory of defense. The research uses more than just a strategy trend study. It also uses qualitative methods like document analysis and interviews with experts. The main findings show that the lack of clear lines between conventional and nuclear limits makes the fast nuclear development South Asia is going through worse. Because of these effects, South Asia's instability may get worse, which could change policies on arms control, the structure of global security, and methods for handling crises. To keep conflicts from getting worse and to lower risks, it is important to make policy changes quickly.

Keywords: Nuclear Arms Race; Deterrence Theory; Strategic Stability; South Asia Security; Global Security Order; India-Pakistan Rivalry; China-US Relations

Introduction

Starting during the Cold War, the worldwide race to build nuclear weapons was mostly driv- en by geopolitical rivalry between the US and the USSR. That's Hagerty, D. T., Hagerty, P., and Pusca in 2020. Mutually Assured Destruction (MAD) was the idea behind defense poli- cies, which led to an unheard-of buildup of nuclear arsenals. There have been many arms control agreements since the end of the Cold War, including the Nuclear Non-Proliferation Treaty (NPT), START, and the Intermediate-Range Nuclear Forces (INF Treaty). However, the era has been marked by changes in nuclear postures, plans for modernization, and the birth of new nuclear countries. In 2019, Tehsin, M., Qumber, G., and Ali, A. As we move into the 21st century, the nuclear arms race is being shaped by new technologies such as hy- personic weapons, missile defense systems, and mobile nuclear capability. The competition between the US, Russia, and China in world politics and the weakening of arms deals make this race even worse. Also, rivalries between countries in the same area, especially in South Asia, have turned into major flashpoints that reflect broader fears around the world and test the effectiveness of current strategies for deterrence. They are Abbasi, R., and Khan, Z. It is very important to look into the rise of nuclear competition because it has a big impact on stra- tegic stability, security, and world peace. The fast development of technology and the chang- ing nature of nuclear doctrines have made it harder to define normal levels of deterrence. This has made it more likely that mistakes will be made, that things will get worse without mean- ing to, and that there will be conflict. It's getting harder to

keep the world safe because exist- ing arsenals are being updated, new nuclear powers are joining the game, and arms control methods are becoming less effective. Kraig, M. R. Going over these events can help you un- derstand how power is shifting, find new flashpoints, and judge how well current programs for non-proliferation and weapons control are working. There is a real chance that things will get worse, especially in places like South Asia where long-running rivals meet nuclear power. So, a study done at the right time can help to support programs that lower risks, educate law- makers, and help build movements for disarmament and avoiding war around the world. Mül- ler, H. South Asia is one of the least stable places in the world when it comes to nuclear weapons. India, Pakistan, and a growingly aggressive China are all involved in a triangular geopolitical struggle there. India and Pakistan are getting more and better nuclear weapons and delivery systems, which makes their already bad relationship even worse. Their anger is rooted in past wars and disagreements over land. India's changing stance on punitive retribu- tion and Pakistan's dependence on tactical nuclear weapons to balance out India's conven- tional superiority make the instability of deterrent stability in the area even worse. India's strategic stance in response to China's growing military and nuclear power and its aggressive behavior in the Indo-Pacific is also being looked at. This could lead to a faster arms race in the region. Tan, A. T. South Asia is a big nuclear flashpoint with major security consequenc- es for the whole world.

This is because there aren't any strong regional arms control systems in place, there are many unresolved conflicts, and technology is changing quickly. New tech- nologies, stronger geopolitical rivalries, and changes in doctrine are all contributing to the rising tides of nuclear arms competition. This is putting a light on the future of world deter- rence. Major powers like the US, China, and Russia are updating their arsenals, making hy- personic glide vehicles, and looking into space-based and AI-driven systems. This goes against the idea of deterrence that was popularized during the Cold War. India and Pakistan are both getting better at and improving their nuclear policies and capabilities, which makes people worry about crises and unrest. Their ongoing conflict in South Asia makes these glob- al trends even worse. In 2020, Hagerty, D. T. There is a greater chance of making a mistake because of the many unknowns. These risks are raised by the creation of multiple inde- pendently targeted reentry vehicles (MIRVs), nuclear weapons for war, and submarine-based deterrents. Chi-na's assertiveness in the Indo-Pacific and growing nuclear footprint make South Asia's security situation even more complicated. This means that countries in the area need to rethink their policies. There is strategic uncertainty because Pakistan is focusing on full-spectrum deterrence and India is likely to switch to counterforce tactics. Hagerty, D. T. It is more likely for things to

get worse, whether on purpose or by mistake, in South Asia because there aren't many strong regional discussion systems and world weapons control sys- tems are getting weaker. Cyberwarfare and new disruptive technologies are also built into nuclear command and control systems. This creates new weaknesses that can quickly get worse. The current ideas of deterrence can't compare to the nuclear arms race, which now in- cludes cyber, space, and traditional realms. The future of deterrence relies on creative ways to lower risks, programs that boost trust, and working together across borders. This is especially true in South Asia. If these kinds of steps aren't taken, the area could become the center of strategic unrest, which would put world peace and security at risk. To put the rising tides of deterrence into action, we need to look at how changing nuclear strategies, technical advances, and geopolitical situations affect the security of the world and South Asia. A book by Bhu-mitra Chakma. This includes looking at how to improve nuclear arsenals, how to use cutting-edge technologies like hypersonic weapons, and how to combine nuclear and conven- tional strategies. A lot of attention is being paid to South Asia because India, Pakistan, and China's shifting positions, which include tactical weapons, MIRVs, and sea-based platforms, have made it more likely that things will get worse. The paper looks at the problems that hackers pose to nuclear command and control systems and how policies to limit the spread of nuclear weapons are getting weaker around the world. It also looks at how the growing stra- tegic importance of China in the area affects the security of Pakistan and India. You can find Basrur, R. M. Another thing that is being closely looked at is South Asia's lack of legal ways to communicate and lower risks. The study looks at how well track-II diplomacy, programs that build trust, and multilateral forums reduce the chance of war. Lastly, the paper suggests making strategic changes to deterrence theories so that new threats from multiple domains are taken into account and policy tools are created to help maintain stability in the area and han- dle crises.

Theoretical Framework

This paper is based on the idea of deterrence theory, which says that countries get and keep nuclear weapons to keep enemies from starting war by making them afraid of terrible conse- quences. The security conundrum shows how actions taken by one country to make itself saf- er, like updating its nuclear arsenal, could be seen as a danger by other countries, leading to responses that are returned in kind. These points of view are strengthened even more by arms race theory, which focuses on how states compete to get more weapons than their foes. When you put these theories together, they help you understand how nuclear dynamics are changing in South Asia, where past wars and a lack of trust in strategic decisions make the risks of building up weapons and instability during crises even higher. The use of these models allows us to investigate how players' strategies in the area impact

technology and policy.

Research Questions

- Do new ideas about nuclear programmes, advances in technology and modernization pro- jects increase threat and change the way countries deter attacks in South Asia?
- How does the expanding arms race for nuclear weapons in South Asia impact regional security, managing crises and efforts to stop new nuclear programs worldwide?

Research Problem & Objectives Problem Statement

The development of modern projects, changed policies and new technologies is helping to rekindle the competition in nuclear weapons. It is making the world's deterrent system increasingly complex. There are many concerns about these changes as a result of the unstable security climate and rivalry among India, Pakistan and China. Such outbreaks of nuclear competition are now serious threats to stability across the region and effective crisis management, as well as efforts for global non-proliferation. Responding to these threats should happen quickly in academic and policy areas.

Objectives

- To study in detail how the introduction of new methods, theories and technology affects deterrence and raises the likelihood of war in South Asia.
- To evaluate how changes in the nuclear arms race in South Asia affect stability in the re- gion, crisis response and efforts to stop nuclear proliferation globally.

Literature Review

In the Cold War, people generally agreed that Mutually Assured Destruction (MAD) was im- portant because no one side wanted to use nuclear weapons and risk their nation's complete destruction. Things have changed a lot in the discussion over the years. Brady, B. published this text in 2024. After the Cold War, the security system focused on MAD draws attention to risks from mistakes or accidents. With more nations having nuclear arsenals and working on state-of-the-art projects, many wonder what new technology such as hypersonic and missile defense systems will mean for keeping countries away from war. In 2020, the book was pub- lished by Carranza, M. E. There is concern within security theory that Russia, the US and China might spark another arms race. Officials have said that these weapons break the longstanding rules and agreements put in place to prevent wars and reduce arms. The arms race in Asia becomes more involved because of the competition between India and Pakistan. It's often impossible to distinguish between normal and nuclear conflicts due to their nuclear competition. Wueger, D. This writing highlights how close we are coming to serious nuclear conflict and that trust is rapidly disappearing among countries. To keep terrible wars from occurring, people think of new diplomatic solutions to tackle these challenges.

China is quickly updating its nuclear forces and making them more strategic. This is making the competition between the US and China over nuclear weapons a big threat to world securi- ty. China has always had a strategy of holding nuclear weapons to a minimum. But recently, its nuclear fleet has grown in size and complexity, making it harder for the US to be the world's nuclear leader. Because of China's increasing strength, the US is equipping its nucle- ar arsenal with low-yield nukes and hypersonic rockets. In 2018, research from Zaman, S. U. Experts worry that the change might actually weaken strategic security, mainly in the Indo- Pacific, where the nuclear deterrent is vital for balance. Since China is not interested in join- ing talks on arms control, it becomes even more difficult to stop a new arms race. The growth of China's nuclear program is mainly because of concerns about US war plans and missile defense. Differences in the nuclear policies of the US and China could make the region less safe, opening the door to more mistakes. Till, G. was the author of the article. Such remarks also make us question present weapons policy and examine ways we could cut back on weapons use in the future. The growth in nuclear stock by both the US and China proves how complex nuclear deterrence has become with the presence of many superpowers. Though In- dia, Pakistan and China differ in their views on nuclear weapons, closer economic links are bringing changes to the region. NFU is a policy included in the minimum deterrent plan adopted by India. New discussions indicate that compromise might be possible. Wueger, D.B. Pakistan doesn't use a nuclear force umbrella (NFU), but instead uses full-spectrum deter-rence, which includes tactical nuclear weapons, to counter India's military superiority and stop escalation. China has kept a minimum deterrent stance with its NFU strategy for a long time. But it is currently updating its weapons by adding missiles that can hit MIRVs and making it easier for it to launch a second strike. India is slowly looking at its nuclear policy through the lenses of both Pakistan and China. This is leading to changes in doctrine and ca- pabilities, which makes the triangular struggle more difficult. Pakistan thinks that India's at- tempts to modernize and defend itself against missiles are existential threats, which is why it spends more on nuclear weapons. For India, the United States is the most important thing right now, but China's growing power in the area has an indirect effect on its strategic think- ing.

This year, Arquilla, J.This triangle-shaped threat is growing, which could make the in- stability of the South Asian problem worse and hide nuclear threats. Major countries are sup- porting new technologies like hypersonic glide vehicles (HGVs), multiple independently tar- getable re-entry vehicles (MIRVs), and covert delivery systems as their nuclear arsenals are updated to improve global deterrence. Hypersonic weapons—those that can move faster than Mach 5—are seen as unstable because they can get around current missile defenses, which shorten the time needed to make

decisions in times of crisis. With MIRV technology, one rocket can carry more than one warhead. This makes the arsenals of countries like China, Russia, and the US more powerful and less likely to be destroyed. China's DF-41 ICBM and India's Agni-V are both MIRV-capable weapons in Asia, and they have both made regional arms competition tougher. These improvements make it harder to tell the difference between conventional and nuclear weapons, which weakens deterrence and raises the risk of preemp- tive strikes. The sources are Krepon, M., Jones, R. W., and Haider, Z. The race to modernize is also making it harder to control weapons, since conventional treaties aren't designed to deal with new technologies well enough. This makes world security problems worse. Even though a lot has been written about nuclear security and arms races, there are still big holes in the research that focus on how the nuclear situation in South Asia is changing. Singh, S. (2016). Most of the current study focuses on India's rivalry with Pakistan and doesn't pay much attention to China's growing strategic influence in the area. Carranza, M. E. year 2016. Also, the impact of new technologies like missile defense, MIRVs, and hypersonic missiles on the stability of deterrence in South Asia and the worsening of crises has only been partly studied. In 2020, Medcalf, R., Mansted, K., Frühling, S., and Goldrick, J. The link between imbalances in conventional forces, changes in doctrine, and the role of new areas like cyber and space in nuclear strategy is still mostly unexplored. Another issue that isn't talked about enough in academic discussion is the fact that South Asia doesn't have any comprehensive regional arms control systems or crisis management strategies. Till, G., Chew, E., & Ho, J. (Eds.). This gap makes it hard to fully understand what's going on because the trilateral nu- clear race is changing strategic stability and making it more likely that things will get worse without meaning to.

Methodology

This essay looks at the changing nuclear dynamics and strategic competition in South Asia within the bigger picture of the global nuclear arms race. It does this by using qualitative, an- alytical, and comparative research methods. Most of the information used in the study comes from secondary sources, such as government white papers, official military theories, scholar- ly publications, reports from think tanks like SIPRI and IISS, and the opinions of experts. The main reason for collecting data is to look into China's, Pakistan's, and India's nuclear posi- tions, modernization efforts, and changes to their doctrines. The study uses comparative analysis to look at how these nuclear players are alike, how they are different, how they interact with each other, and how they contribute to strategic uncertainty. Scenario assessment tools are also used to look at possible crisis situations and ways things could get worse, taking into account new technologies and ideas. This scientific approach helps us fully understand how the area's deterrents are changing and what that means for the safety of the

region and the world.

Discussion & Analysis

The global nuclear arms race is back as an important part of world security. It is marked by rising tensions between the US, Russia, and China. During the Cold War, these states were more cautious, but now they are working on big nuclear upgrade projects to make their stra- tegic arsenals stronger and more diverse. The US is putting a lot of money into updating its nuclear triad, which includes stealth aircraft, ballistic missile submarines, and new interconti- nental ballistic missiles (ICBMs). To the same point, Russia is improving its military power by adding cutting-edge technologies like the A vanguard hypersonic glide vehicle and the Poseidon underwater nuclear drone. In the meantime, China is building up its nuclear fleet and getting missiles that can hit multiple targets at once to improve its second-strike capabil- ity.

Along with traditional modernization, the use of new technology is also changing the military competition in a big way. Using hypersonic weapons that can get around current missile de- fenses and AI-driven command and control systems raises the risk of fast escalation by mak- ing it take longer to make decisions. The militaryization of space-based platforms, such as missile tracking and anti-satellite weapons, is causing new strategic competition areas to form. This is having an effect on crisis stabilization and deterrence. Long-standing arms con- trol deals, like the INF Treaty and New START, are being wiped out by these trends. This is making people worry about an uncontrollable multi-domain nuclear arms race. The current race is more complicated than the two-sided Cold War struggle because of changes in doc- trine, new technologies, and players from different parts of the world. In this way, it has made strategy instability and uncertainty worse around the world. The strategic position, modernization efforts, and changing policies of China are making the nuclear scene in South Asia more complicated than ever before. India is regularly improving its nuclear doctrine and capabilities, going beyond its traditional credible minimum deterrent stance. It is doing this by adding MIRV-capable Agni-V to its missile forces and building new platforms, most notably nuclear-powered ballistic missile submarines (SSBNs). India has a policy called "No-First-Use" (NFU), but recently the country's strategy community has been debating whether the policy could be changed, especially in response to threats from China and Pakistan. In order to counter India's conventional and missile defense benefits, Pa- kistan is still looking for ways to balance out its full-spectrum deterrence theory, which in- cludes the use of tactical nuclear weapons and the creation of short-range delivery systems like Nasr. By adding new MIRV-equipped missiles, increasing its SSBN fleet, and working on its second-strike capabilities, China is quickly modernizing its nuclear arsenal. This makes the situation between the two countries even more complicated. To deal with a double nucle- ar

threat, India needs to change its deterrent policies. This is because China's nuclear stance, while mostly aimed at the US, has big effects on South Asia. This makes Pakistan think that there is a bigger danger, which could lead to more vertical proliferation and ideological hard- ening. The lack of regional arms control systems, confidence-building programs, and reliable crisis communication lines makes the risks of unintended escalation and misinterpretation even higher.

So, South Asia's nuclear dynamics are becoming more like those around the world. This raises new worries about the area's ability to escalate in multiple areas, keep things stable during crises, and effectively prevent others. The loss of strategic stability at both the global and regional levels is made worse by the fact that nuclear arsenals are always getting bigger and policies are always changing. Modern technologies like MIRVs, hypersonic missiles, and dual-use delivery systems are making it harder to tell the difference between conventional and nuclear deterrents, which is a danger- ous state of doubt. In South Asia, unclear doctrines like India's disputed ability to be flexible about its No-First-Use (NFU) policy and Pakistan's unclear nuclear use limits make it harder for enemies to make strategic decisions, which makes the situation more unstable. These un- clear situations, especially during crises, make it much more likely that someone will make a mistake, try to stop a conflict before it starts, or cause it to get worse without meaning to. They also make it harder to make deals on arms control and change the posture of force. Real-time monitoring systems and new technology make it harder to make decisions on time, which makes it more likely that things will get worse without meaning to in places like South Asia. China's aggressive behavior creates threats on multiple fronts and increases the chance of rapid escalation cascades, which makes the deterrent dynamics between India and Pakistan even more complicated. Adding cyber and spatial domains to nuclear command and control makes things even less stable because attacks on early warning systems or communication networks could be used to launch nuclear strikes before they happen. The instability is made even worse by the fact that major nuclear players don't have good crisis management sys- tems, hotlines, or risk-lowering strategies. All of these planned changes show that the situa- tion is very unstable; there is little chance of prevention, there is a high chance of things get- ting worse, and even small events could have terrible results. Because South Asia is becom- ing more nuclear competitive and making changes to its security framework, it is becoming more open to crises. Because of the way the triangle dynamics between India, Pakistan, and China work, the deterrence environment is unstable, with unclear escalation thresholds and shorter reaction times. South Asia is not covered by treaties like the NPT and does not have effective regional arms control processes.

These changes pose major problems for non- proliferation

and arms control regimes around the world. India's change in doctrine and China and Pakistan's improvements to their nuclear arsenals make it harder for the region to join global efforts to reduce nuclear weapons. South Asia's nuclear paths are greatly affected by players from outside the area, especially the US, Russia, and China. These countries do this by providing strategic support, competing with other countries in the global power market, and supplying technology. Depending on the strategies used, this outside interference could either make things worse or give peacemakers reason to be more careful. At this point in time, confidence-building measures (CBMs), crisis communication tools, and multilateral diplomatic efforts are very important because they help lower risks and raise openness. Build- ing trust in arms control, setting up hotlines, and talking about strategic stability could all help stop unplanned escalation and encourage responsible nuclear behavior. Without active diplomatic efforts and well-established risk-reduction systems, the area and, by extension, world security are more likely to be unstable, conflicts to happen by accident, and the non- proliferation policy as a whole to become weaker. Changing nuclear theories, modernization plans, and strategic technologies are making the risks of war higher and the way deterrence works in South Asia very different. India's move to nuclear weapons, such as MIRVs and nu- clear-powered submarines, shows that plausible minimum deterrence is no longer working, and the nuclear situation in the area is becoming more complicated.

To counter India's con- ventional advantage, Pakistan has reacted by making tactical nuclear weapons better and us- ing a full-spectrum deterrent strategy. Increasing the number of second-strike weapons and deploying missiles with MIRVs are two of China's nuclear modernization projects that make the security situation in the area more difficult. When paired with new technologies like hy- personic missiles and artificial intelligence, these changes are making things more dangerous, making traditional deterrent systems more difficult to use, and cutting down on the time it takes to make decisions. This creates an environment where mistakes are more likely to hap- pen during crises, which threatens the stability of the area. Doctrinal uncertainties and the lack of established crisis management systems make it more likely that a situation will get worse, either on purpose or by accident, and escalate into a nuclear war. The growing com- petitiveness of nuclear weapons has larger effects on non-proliferation regimes around the world. This is especially true since South Asia is still not a part of important agreements like the NPT. This nuclear arms race calls into question efforts to keep nuclear weapons from get- ting into more hands. It also threatens present arms control agreements, which breaks up and threatens the stability of the world's nuclear order. Setting up Confidence-Building Measures (CBMs) and taking part in international talks about arms control are therefore necessary to help lower emotions

and stop the area from accidentally getting worse. The nuclear arms race and changes in South Asia's strategy show the different paths that India, China, and Pakistan take based on their different security goals and views in the area. China is dedicated to continuously modernizing its nuclear triad, which includes building up its arsenal and making advanced weapons like MIRVs and hypersonic bombs, even though it has a clear policy of "No First Use." China and Pakistan pose a double danger to India, so the country is currently working on expanding its nuclear delivery options, making its sea-based deterrent stronger, and thinking about how to change its normally conservative stance. Pakistan, which thinks that India is stronger in traditional ways, uses full-spectrum deterrence, which includes tacti- cal nuclear weapons, to hide what it thinks are India's flaws. India wants a credible minimum deterrence with more flexibility, Pakistan wants to be in charge of escalation at lower levels, and China wants to keep the peace in the area and use strategic deterrence against the US. When there is a crisis, these different tactics make a tricky triangle deterrent environmentwhere unclear doctrines, shifting positions, and technological competition make instability worries worse.

Conclusion

The research indicates that the nuclear arms race globally and in South Asia are closely inter- connected and complex. It is clear that the increased US-Russian-Chinese rivalry is bringing about big changes to the use of nuclear weapons globally, as well as having major impacts on nuclear weapons in South Asia. Because of modernization attempts by major powers, nuclear deterrence has gone through many changes. As an illustration, they now use hypersonic weapons, vehicles designed to deal with landmines and artificial intelligence in their com- mand and control systems. India’s nuclear approach has moved from strict, basic minimum deterrence to perhaps more likely to use other choices. The region’s nuclear competition has become even stronger due to how serious Pakistan and China are in their strategies. Because nuclear strategies and technology are shifting, the strategic environment in the region is un- dergoing change. As a result, the world is less certain of strategies and more likely to experi- ence unintentional conflict. Since there are various types of nuclear use, it becomes more likely that someone will misjudge and things will get more serious by accident. It matters most when India works to upgrade its nuclear arsenal and Pakistan has mobile nuclear weap- ons. No official arms control systems or multilateral treaties exist in South Asia. Consequent- ly, important arms control groups such as the NPT do not include the global non-proliferation regime. Advances in this field only make it easier for guns to spread and harder for countries to control them. Therefore, it matters to learn how the success of nuclear energy in South Asia might change nuclear development across the globe. Both South Asia’s security setup and efforts to limit the number of weapons worldwide are being

influenced by the shifting developments. There is further instability because the area has few CBMs and weak crisis management systems. That's why the international community must join in the effort. For this reason, the study strongly urges South Asia to begin serious discussions on arms control as quickly as possible. They should center on aversion of crises, risk management and greater transparency. Working together, both local countries in South Asia and international powers from the US, Russia and China will help maintain stability in nuclear policies. The negotia- tors should ensure that any formal arms control deal is put in place early to block a major nu- clear arms race and protect both regional and global security by ensuring safe communica- tion.

Recommendations

Taking a lot of important steps will help stop a full-scale arms race and stop South Asia from becoming more nuclear unstable. India, Pakistan, and China should start trilateral or multina- tional arms control talks so that they can work together and talk about lowering the risk of nuclear war. By coming to an understanding on issues like openness, limits, and check sys- tems, these talks could help reduce disagreements and the chance of mistakes. Another im- portant step in crisis management is for the nuclear-armed countries in South Asia to set up early warning systems and hotlines. As these contact channels make it possible for tensions to drop quickly when they are rising, they help keep small problems from turning into nuclear wars.

Also, the return of Track-II diplomacy in South Asia—that is, conversations that aren't offi- cial between experts, past diplomats, and civil society groups—may offer a space for creative problem-solving and building bridges without being limited by official government rules. This can help set the stage for official talks by fostering trust and understanding between the two sides. Last but not least, it is important to get world nuclear powers like China, Russia, and the US to sign broader arms control deals with South Asian countries. Getting South Asia involved in global arms control will help to make the area's nuclear dynamics part of the world's security system. This will support group efforts to stop the spread of nuclear weapons and get rid of all of them. All of these steps work together to make the place safer and less likely to escalate to a nuclear level.

References

Abbasi, R., & Khan, Z. (2019). *Nuclear deterrence in South Asia: New technologies and challenges to sustainable peace*. Routledge.

Arquilla, J. (2020). Nuclear weapons in South Asia: More may be manageable. *Comparative Strategy*, *16*(1), 13-31.

Basrur, R. M. (2024). *Nuclear Deterrence: The Wohlstetter-Blackett Debate Re- visited*. S. Rajaratnam School of International Studies, A Graduate School of Nanyang Technological University.

Bhumitra Chakma. (2024). *Strategic dynamics and nuclear weapons proliferation in South Asia: a historical analysis* (Vol. 489). Peter Lang.

Carranza, M. E. (2016). *India-Pakistan nuclear diplomacy: Constructivism and the prospects for nuclear arms control and disarmament in South Asia*. Rowman & Littlefield.

Carranza, M. E. (2020). *South Asian security and international nuclear order: Creating a robust Indo-Pakistani nuclear arms control regime*. Routledge.

Chellaney, B. (2024). South Asia's passage to nuclear power. *International Security*, *16*(1), 43-72.

Hagerty, D. T. (2020). *The theory and practice of nuclear deterrence in South Asia*. University of Pennsylvania.

Hagerty, D. T. (2023). *The consequences of nuclear proliferation: Lessons from South Asia*. MIT Press.

Hagerty, D. T., Hagerty, P., & Pusca. (2020). *Nuclear weapons and deterrence stability in South Asia*. Gewerbestrasse, Switzerland: Palgrave Macmillan.

Kraig, M. R. (2023). The political and strategic imperatives of nuclear deterrence in South Asia. *India Review*, *2*(1), 1-48.

Krepon, M., Jones, R. W., & Haider, Z. (2024). *Escalation control and the nuclear option in South Asia* (p. 23). Henry L. Stimson Center.

Medcalf, R., Mansted, K., Frühling, S., & Goldrick, J. (2020). *The Future of the Undersea Deterrant: A Global Survey*. National Security College, The Australian National University.

Müller, H. (2024). Looking at nuclear rivalry: The role of nuclear deterrence. Strategic Analysis, 38(4), 464-475.

Sharma, S. (2016). Endogenous Nuclear Deterrence: The Bomb and Security in South Asia. Jadavpur Journal of International Relations, 20(2), 178-205.

Tan, A. T. (2023). The arms race in Asia: Trends, causes and *implications*. Routledge.

Tehsin, M., Qumber, G., & Ali, A. (2019). Strategic stability in South Asia: Pakistan and the Challenges of nuclear deterrence. *South Asian Studies*, *34*(01), 333-346.

Till, G. (2017). *Asia's naval expansion: an arms race in the making?*. Routledge.

Till, G., Chew, E., & Ho, J. (Eds.). (2023). *Globalisation and Defence in the Asia- Pacific: Arms across Asia*. RoutledgeWueger, D. (2019). India's Nuclear-Armed Submarines: Deterrence or Danger?. *The Washington Quarterly*, *39*(3), 77-90.

Wueger, D. B. (2024). *Deterring war or courting disaster: an analysis of nuclear weapons in the Indian Ocean* (Doctoral dissertation, Monterey, California: Naval Postgraduate School).

Zaman, S. U. (2018). South Asia Nuclear Deterrence Beyond 2016: Challenges and Future Prospects. *Journal of Security & Strategic Analyses*, *3*(2), 29-44.