

South Korean Nuclear Aspiration and its Impact on Regional Security

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Abstract

This paper explores the complex and multifaceted challenges surrounding South Korea's nuclear weapons programme. It is recognised that as a key player in the regional and global security landscape, South Korea's decisions on this issue will have far-reaching implications for the future of international security and stability. Drawing on the Nuclear Revolution Theory, the paper examines the potential benefits and drawbacks of possessing nuclear weapons, as well as the historical context and regional security considerations that have shaped South Korea's past interest in a nuclear weapons programme. The study also analyses the current geopolitical landscape, including the danger posed by North Korea's nuclear weapons programme and US policy on nuclear proliferation. The viability of the nuclear weapons programme and its implications for South Korea are assessed through qualitative reasoning. The South Korean potentials for nuclear proliferation, its negative impact on global non-proliferation efforts, its deterrence value against North Korea and regional security benefits are examined. Alternatives to pursuing a nuclear weapons programme, such as strengthening conventional military capabilities and diplomatic

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efforts to denuclearise the Korean peninsula are also discussed.

Key Words: Nuclear Revolution Theory, Nuclear Proliferation, Deterrence, Nuclear strategy, Nuclear Weapons, North Korea, South Korea.

Introduction

South Korea's military is primarily focused on defending borders from neighbouring North Korea, which it considers a serious military threat given the nature of its bilateral relations. Geography dictates the relations between these two states. Located in East Asia, the country has arch-rival North Korea on its Northern, the Sea of Japan on the Eastern, the Yellow Sea on its Western and the Korean Strait on its Southern Border. Having a population of 51 million, South Korea is the 28th largest state in the world and has a strong military with over half a million active-duty personnel.³

South Korea has improvised in developing advanced conventional weapons capabilities to take on a nuclear-armed rival North Korea, which is a unique modus operandi for a non-nuclear armed state.⁴ In September 2021, South Korea tested a submarine-launched ballistic missile (SLBM), becoming the first non-nuclear country with such a capability.⁵ In January 2023, President Yoon Suk Yeol stated that if threats from North Korea worsen, the country may move towards developing "tactical nuclear weapons."⁶ Such calls have been thwarted by the international

³ "South Korea", CIA World Factbook, accessed June 12, 2023, <https://www.cia.gov/the-world-factbook/countries/korea-south/#people-and-society>

⁴ Ian Bowers and Henrik Stålhane Hiim, "Conventional counterforce dilemmas: South Korea's deterrence strategy and stability on the Korean Peninsula", *International Security* 45, no. 3 (2020): 7-39.

⁵ Kelsey Davenport, "South Korea Tests Submarine-Launched Missile", *Arms Control Today* 51, no. 8 (2021): 34-34.

⁶ Kelsey Davenport, "South Korea walks back Nuclear Weapons Comments" *Arms Control Association*, last modified March, 2023, <https://www.armscontrol.org/act/2023-03/news/south-korea-walks-back-nuclear-weapons-comments>

community, which continues to view nuclear proliferation as a significant threat to global security.

ROK's military has a key role in maintaining security and stability. Due to a strong rival state across the border, the political and military dimensions of South Korea are closely intertwined. The East-Asian state spends heavily to develop or maintain its military muscle and continues to communicate with allies, including the US and Japan, to ensure presence on the diplomatic front. All these factors make South Korea a complex and dynamic country with a unique political and military landscape focused primarily on defence against threats posed by nuclear North Korea.

South Korea is located in hostile neighbourhood that includes North Korea, which has developed nuclear arsenals and long-range missiles, posing threat to its national security. As a result, South Korean policymakers believe that developing their own nuclear weapons could serve as a deterrent and enhance their national security. The pursuit of nuclear weapons will also provide political leverage to South Korean politicians and policymakers who believe that possessing nuclear weapons would boost the country's political standing and increase influence on the global stage.

South Korea relies heavily on the US for its security, and the US nuclear umbrella provides a measure of deterrence against potential adversaries. However, the credibility of this deterrence could be undermined by changing US leadership or shifts in US foreign policy. Developing their own nuclear weapons would ensure that South Korea has a credible deterrence capability independent of the US.

This paper explores the complex and multifaceted challenges surrounding South Korea's nuclear aspirations. Drawing on the Nuclear Revolution Theory, the paper examines the potential benefits and drawbacks of possessing nuclear weapons and regional security considerations that have shaped South Korea's past interest in a nuclear

weapons programme. The paper evaluates the viability of nuclear weapons for South Korea and suggests other viable options to safeguard its national security.

Nuclear Revolution Theory

The Nuclear Revolution theory suggests that the development and acquisition of nuclear weapons alter the nature of global politics. According to this theory, nuclear weapons are a powerful tool for deterrence and coercion. Through nuclear weapons, prospects of preserving the status quo increase since the defendant has more at stake as the pain of losing a thing is always greater than the joy of gaining another of the same value.⁷ It also states that a war between two nuclear-weapon states would be less likely once both manage to acquire a second-strike capability.⁸

In South Korea's case, the possibility of pursuing a nuclear programme must be considered in the context of a complex geopolitical landscape. On one hand, the nuclear weapons programme of DPRK presents a significant risk to the security of South Korea and the broader stability of the region; while on the other hand, South Korea's pursuit of nuclear weapons could have significant implications for its relationship with the US, China, and other key players in the region.

From the perspective of the Nuclear Revolution theory, the development of nuclear weapons by South Korea would likely lead to several significant changes in the regional security environment. First and foremost, it would introduce new dynamics as North Korea and other potential adversaries would need to adjust their strategies and calculations considering this new threat which may also increase the risk of miscalculation in any future conflict.

⁷ Robert Jervis, *The meaning of the nuclear revolution: Statecraft and the prospect of Armageddon* (New York: Cornell University Press, 1989), 28-31.

⁸ Robert Jervis, "The meaning of the nuclear revolution", 35.

At the same time, the acquisition of nuclear weapons by South Korea would also provide a powerful new tool for deterrence and coercion. By possessing nuclear weapons, South Korea would be able to deter North Korea and other adversaries from taking aggressive action. The risks of attacking South Korea would increase, and states would be forced to fear destruction in retaliation.⁹ After becoming a nuclear weapons state, South Korea may also be able to use its nuclear arsenal as a bargaining chip in negotiations or other forms of diplomacy. However, possessing nuclear weapons also carries significant risks as the threat of their use can sometimes lead to unintended escalation or crisis.

Overall, the viability and implications of a nuclear weapons programme for South Korea must be carefully assessed, considering the complex geopolitical landscape in which it finds itself. While nuclear weapons could provide a powerful new tool for deterrence and coercion, they also introduce significant risks and uncertainties. They could have far-reaching implications for South Korea's relationships with other key regional players. As such, any decision to pursue a nuclear weapons programme should be made only after careful consideration of these factors and a comprehensive assessment of the costs and benefits of such a programme.

Nuclear weapons in the Korean peninsula

Since the peninsula's bifurcation in 1945, the Korean rivalry has continued. Security threats have persisted with the two countries engaged in a tense and often violent standoff for decades. However, the North Korean pursuit of nuclear weapons has added fuel to the fire. North Korea has been actively pursuing nuclear weapons for many years, which has increased international concerns about the proliferation of weapons and regional stability.

⁹ Scott D. Sagan, "Nuclear Revelations About the Nuclear Revolution," *Texas National Security Review* (2021): 136.

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Pyongyang has remained involved in nuclear research programmes since the 1950s as it feared lagging behind South Korea. The former also reached an agreement with the Soviets to develop peaceful nuclear infrastructure, because of which the Soviets helped North Korea establish a reactor at Yongbyang. North Korea started to see nuclear weapons as a deterrent against foreign aggression and, in 1980, established a facility that could produce weapons-grade Plutonium.¹⁰ Later in January 2003, North Korea withdrew from the Nuclear Non Proliferation Treaty (NPT) and conducted its first nuclear test on October 9, 2006. The International community has constantly pressured Pyongyang on multiple fronts, but the latter's lure for nuclearisation remains intact.¹¹

South Korea's interest in developing nuclear weapons is not new. Rather, it dates back to the Post-Korean War period. Policymakers in South Korea believe that developing nuclear weapons would provide the country with a strategic deterrent and enhance its security. There have been voices in South Korea demanding the development of an indigenous weapon programme rather than resorting to the US commitment to providing a nuclear umbrella which experiences shifts with changing leaders. For instance, when the Nixon Doctrine declared that the Asian allies should depend more on self-defence, the confidence of stakeholders in Seoul shook and paved the way for increased interest in nuclear weapons.¹² Also, the fear of the development of nuclear weapons by DPRK has contributed to the sense of urgency in South Korea. The reasons for promoting proliferation were diverse, encompassing concerns

¹⁰ B. Wakefield and R. M. Hathaway, "Revisiting History: North Korea and Nuclear Weapons," Wilson Center, November 3, 2010, <https://www.wilsoncenter.org/event/revisiting-history-north-korea-and-nuclear-weapons>.

¹¹ "Fact Sheet on DPRK Nuclear Safeguards," International Atomic Energy Agency, accessed June 9, 2023,

<https://www.iaea.org/newscenter/focus/dprk/fact-sheet-on-dprk-nuclear-safeguards>.

¹² Rebecca KC Hersman and Robert Peters, "Nuclear u-turns: Learning from South Korean and Taiwanese rollback." *Nonproliferation Review* 13, no. 3 (2006): 540.

regarding national security, political goals, the need for deterrence credibility and the desire for national prestige.

In 1970, the Weapons Exploitation Committee was formed in ROK, which initiated a programme in collaboration with Defence Development Agency that required nuclear technologies and reactors. During the same period, Seoul started a covert weapons research effort to develop its own nuclear arsenal in case the US removed its nuclear umbrella.¹³ Hence, under President Park Chung Hee, South Korea continued its nuclearisation attempts from 1971 to 1975, before these attempts were halted due to immense US pressure, which led to the former's ratification of the NPT in 1975.¹⁴

In the early 1990s, Seoul reassured its resolve against nuclearisation and signed a "Joint Declaration on denuclearisation" with DPRK in December 1991.¹⁵ However, in 2004, Seoul disclosed that it was involved in chemical Uranium enrichment between 1979 and 1981. It was also revealed that Plutonium was separated, and Uranium munitions were manufactured from 1983-1987.¹⁶ ROK acknowledged that in 2000 it conducted clandestine enrichment experiments. This led IAEA to start an investigation against Seoul, unveiling that the latter was involved in reprocessing experiments in violation of safeguards.¹⁷ However, it is also true that South Korea is one of the most vocal opponents of nuclear weapons and has actively participated in international efforts to avoid the development of nuclear weapons. For instance, it played a leading role in

¹³ Rebecca KC Hersman and Robert Peters, "Nuclear u-turns," 541.

¹⁴ Christopher Way and Karthika Sasikumar, "Leaders and laggards: When and why do countries sign the NPT," *Montreal: Research Group in International Security (REGIS) Working Paper* (2004): 14.

¹⁵ Christopher W. Hughes, "North Korea's nuclear weapons: implications for the nuclear ambitions of Japan, South Korea, and Taiwan," *Asia Policy* 3 (2007): 93, 95.

¹⁶ Jungmin Kang, Peter Hayes, Li Bin, Tatsujiro Suzuki, and Richard Tanter, "South Korea's nuclear surprise," *Bulletin of the Atomic Scientists* 61, no. 1 (2005): 40.

¹⁷ James M. Acton, "the Problem with nuclear Mind reading," *Survival* 51, no. 1 (2009): 136.

promoting regional cooperation through participation in initiatives including ASEAN+3, the East Asia Summit and the Six-Party.¹⁸

International Response to South Korea's Nuclear Ambitions

Efforts to prevent proliferation in the Korean Peninsula have been ongoing for many years. The United Nations has continually imposed sanctions on DPRK to limit its access to fissile materials and enrichment technology, which have, in some instances, seriously hampered people's livelihood.¹⁹ There have also been diplomatic efforts to negotiate a peaceful resolution to the conflict, strengthen non-proliferation regimes and increase cooperation on non-proliferation. Despite the fact that the addition of nuclear weapons has complicated the situation in the Korean Peninsula, global powers (averse to proliferation) have not been able to halt DPRK's nuclear ambitions, a factor that stakeholders in South Korea may not ignore.

South Korea's interest in developing nuclear weapons has received significant attention from the international community. While the country ultimately abandoned these efforts and has become a strong advocate for non-proliferation, concerns about South Korea's nuclear ambitions have not diminished.

The U.S pressured South Korea to abandon its nuclear weapons programme and sign civil nuclear cooperation agreement in 1974, which restricted the latter's Uranium enrichment capabilities.²⁰ Since then, South Korea's nuclear activities have been closely monitored. Other regional countries, particularly North Korea and China, have also closely monitored South Korea's nuclear activities. North Korea has cited South Korea's past nuclear ambitions as a justification for its own nuclear

¹⁸ John S. Park, "Inside multilateralism: The six- party talks", *Washington Quarterly* 28, no. 4 (2005): 75.

¹⁹ Hazel Smith, "The ethics of United Nations sanctions on North Korea: effectiveness, necessity and proportionality," *Critical Asian Studies* 52, no. 2 (2020): 182.

²⁰ Fred McGoldrick and Duyeon Kim, "Decision Time: US-South Korea peaceful nuclear cooperation", *On Korea* (2014): 79.

programme. China has expressed concerns about the possible destabilising effects of a nuclear-armed South Korea and opposed THAAD on the grounds that it would hamper peace and stability in East Asia and impact the proliferation regime.²¹

International organizations, such as the International Atomic Energy Agency (IAEA), have also played their part in monitoring ROK's nuclear activities. IAEA has conducted inspections of South Korea's nuclear facilities and has collaborated to improve the country's nuclear safety and security practices.²² South Korea's commitment to non-proliferation has been recognised and the country's participation in the Proliferation Security Initiative have been commended by the international community.

The international response to South Korea's nuclear ambitions has been shaped by a range of factors, including regional security concerns, international norms, and South Korea's own commitment to non-proliferation. There have been concerns about the potential destabilising effects of a nuclear-armed South Korea. Still, the country's active participation in international non-proliferation efforts has kept it away from unwanted attention.

Implications of South Korean Nuclear Weapons

There are significant risks associated with development of nuclear weapons by South Korea. It may increase regional tensions and spark an arms race with North Korea, China, and Japan. North Korea has already acquired nuclear weapons to ensure its own security and the nuclear weapons of South Korea would be seen as a direct challenge to North

²¹ Michael D. Swaine, "Chinese views on South Korea's deployment of THAAD," *China Leadership Monitor* 52, no. 4 (2017): 4.

²² Jungmin Kang, Peter Hayes, Li Bin, Tatsujiro Suzuki, and Richard Tanter, "South Korea's nuclear surprise," *Bulletin of the Atomic Scientists* 61, no. 1 (2005): 43-45.

Korea.²³ This could escalate tension between both countries, with the potential for a nuclear conflict.

Additionally, developing nuclear weapons would have significant diplomatic consequences for South Korea, as it would violate international non-proliferation norms resulting in strong condemnation from the international community and allies, specifically the US. The possession of nuclear weapons by ROK would also carry the potential to lead to a breakdown in the global non-proliferation regime.

South Korea's nuclear weapons could trigger a proliferation cascade in the region, with other countries, such as Japan and Taiwan possibly following suit. Japan has long had the wherewithal to develop WMDs but has refrained and relied on security alliance with the US.²⁴ The nuclear weapons ambitions of South Korea could also lead Japan to reassess its security situation and potentially pursue nuclear weapons. Similarly, Taiwan, which faces an increasingly assertive China, may feel compelled to develop nuclear weapons to deter any potential Chinese aggression. On the other hand, China may feel compelled to respond to South Korea's development of nuclear weapons. Therefore, the development of nuclear weapons by South Korea would have significant implications for regional and global security, most of which cannot even be fully anticipated.

Alternatives to Pursuing a Nuclear Weapons Programme

There are several alternatives that South Korea could pursue instead of a nuclear weapons programme. One alternative to a nuclear weapons programme would be to focus on strengthening South Korea's

²³ Bruce W. Bennett, Kang Choi, Myong-Hyun Go, Bruce E. Bechtol Jr, Jiyoun Park, Bruce Klingner, and Du-Hyeogn Cha, "Countering the risks of North Korean nuclear weapons" (Santa Monica: Rand Corporation, 2021), 29, <https://www.rand.org/pubs/perspectives/PEA1015-1.html>.

²⁴ Richard P. Cronin, "The North Korean nuclear threat and the US-Japan security alliance: perceived interests, approaches, and prospects." *Fletcher F. World Aff.* 29 (2005): 51.

conventional military capabilities. This could include investing in advanced weapon systems, increasing troop numbers, and improving training and readiness. By doing so, South Korea could maintain a strong conventional deterrence against North Korea and other potential adversaries without the need for nuclear weapons. For example, South Korea has been investing in missile defence systems such as THAAD (Terminal High Altitude Area Defense) and Patriot, which can intercept incoming missiles and protect key military and civilian assets.²⁵

Another alternative would be to pursue diplomatic engagement with North Korea and other potential adversaries in the region. South Korea may build trust and reduce tensions through negotiations, confidence-building measures, and other forms of dialogue. This may help to address the underlying security concerns of North Korea and may lead to a more stable and peaceful region overall. South Korea has been involved in diplomatic efforts to engage with North Korea including summits between the two Koreas in 2018 and 2019, which can be pursued further.

South Korea can pursue greater cooperation with regional countries to enhance security and deter potential threats. This includes closer partnerships with the US, Japan, and other allies. It may further expand to build stronger ties with China and Russia. By working together to address common security challenges, South Korea could help to build a more stable and secure regional order. For example, South Korea has been working to strengthen trilateral security cooperation with the US and Japan and has also sought to build closer economic ties with China.²⁶

²⁵ Tenny Kristiana, "China's Carrot and Stick Game on Terminal High Altitude Area Defense (THAAD) System Deployment," *Studies on Asia* 6, no. 1 (June 3, 2021): 55–71.

²⁶ William T. Tow, "Contingent Trilateralism': Applications for the Trilateral Security Dialogue," in *Asia-Pacific Security*, William Tow, Mark Thomson, Yoshinobu Yamamoto, Satu Limaye (London: Routledge, 2007). 14.

Policy Considerations

Domestic politics and public opinion are significant factors in the decision-making process. In the case of South Korea, the government must consider the potential backlash from its citizens and opposition parties, who might view the development of nuclear weapons as a security threat or a misuse of public resources. Furthermore, international legal obligations and treaty commitments play a crucial role in South Korea's decision-making process. South Korea is a signatory to the Nuclear Non Proliferation Treaty (NPT) and has ratified the Comprehensive Nuclear Test Ban Treaty (CTBT). Pursuing a nuclear weapons programme would violate these international legal obligations and damage South Korea's credibility in the global community. Another critical policy consideration is the impact on regional and global strategic stability. Nuclear weapons programmes often increase the likelihood of arms race and inducing regional instability. The nuclear weapons programme could trigger North Korea to accelerate its nuclear weapons programme, heightening regional tensions and causing instability.

Alternative security strategies should also be considered, such as strengthening conventional military capabilities, diplomatic efforts to denuclearise the Korean peninsula, and cooperative security arrangements with other countries. For example, South Korea could focus on building its missile defence system, strengthening its conventional military capabilities, and pursuing diplomatic efforts with North Korea and other regional actors to denuclearise the Korean peninsula. Alternatively, South Korea could explore cooperative security arrangements with countries like Japan, Australia, and the US, who share similar security concerns in the region.

In terms of future research directions, the impact of emerging technologies on nuclear deterrence and proliferation is a critical area to study. The potential development of hypersonic missiles and other advanced technologies may change the dynamics of nuclear deterrence

and lead to new arms races.²⁷ Additionally, there is a need to examine the role of regional actors in nuclear disarmament and non-proliferation efforts, such as China's role in North Korea's nuclear programme. Finally, the impact of a nuclear-armed South Korea on the US-South Korea alliance is an area that requires further investigation, including the potential for increased tensions with China and other regional actors.

The South Korean government must carefully weigh the advantages and disadvantages of such a programme while considering alternative security strategies and their potential effectiveness. Future research can help inform policy decisions and ensure that actions taken are in the best interest of South Korea and the international community.

Conclusion

The issue of whether South Korea should pursue a nuclear weapons programme or not is a complex ordeal that involves numerous geopolitical and security considerations. South Korea's interest in nuclear weapons, the current geopolitical landscape, and the advantages and disadvantages of South Korea possessing nuclear weapons will decide the future course of action. There are viable alternatives to pursuing a nuclear weapons programme which include strengthening conventional military capabilities, diplomatic efforts to denuclearise the Korean peninsula, and cooperative security arrangements with other countries.

Policy considerations regarding South Korea's nuclear ambitions are complex and involve balancing security concerns with diplomatic considerations. Future research should continue to examine the viability and implications of a nuclear weapons programme for South Korea in the context of a rapidly changing geopolitical landscape. Ultimately, any decision to pursue a nuclear weapons programme must carefully consider

²⁷ Michael T. Klare, "An 'Arms Race in Speed': Hypersonic Weapons and the Changing Calculus of Battle," *Arms Control Today* 49, no. 5 (2019): 6–13.

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the potential costs and benefits and the views of key stakeholders, both domestically and internationally.