Sabre Rattling in Space: A South Asian Perspective

Ahmad Khan and Eligar Sadeh. (Singapore: Springer, 2024), 250

The importance of outer space needs no emphasis, as it is discernible from competition amongst space powers. Meanwhile, the weaponization of global commons, especially outer space, vis-à-vis space securitization, is now debated in space policy discourse. Furthermore, space securitization is viewed through the prism of "Access to Space," which is critical to the military and economic security of the "Nation States." In this domain, *Sabre-rattling in Space: A South Asian Perspective,* co-authored by Ahmad Khan and Eligar Sadeh, is a timely book that articulates various subjects relevant to regional and global security. Khan has completed his PhD from the Department of Strategic Studies, National Defence University (NDU), Islamabad. Sadeh is a former space scientist at National Aeronautics and Space Administration (NASA). He has also served at the United States (US) Air Force Academy, Lockheed Martin, and the University of Colorado, US. This joint academic endeavor is the first-ever book written by a Pakistani and an American scholar on a highly important subject. This book is published by the Springer and comprises nine chapters and a conclusion.

The book's central theme indicates that states have followed a path from space militarization to weaponization. Notably, it explores how the bonhomie between the US-led West and India is evident in obtaining exceptional waivers for niche technologies to develop anti-satellite (ASAT) weapons, endangering space operations. In addition, the book offers a comparative analysis of India's and Pakistan's space policies, suggesting that Pakistan's space ambitions are entirely peaceful and aimed at socio-economic development of the country. Whereas India's space ambitions are focused on weaponizing space. In this book, following key space security aspects are covered from a South Asian perspective.

Schools of Thought on Space Security

Space is a congested, contested, and competitive domain. Major space powers, including the US and China, have invested vital national resources into exploring, exploiting, and using space. However, without understanding the behavior of states, it is naive to map their paths toward space weaponization. No state has accepted that it has deployed space weapons in outer space. However, specific behaviors exhibited by spacefaring states demonstrate that space has been weaponized.

The book discusses four schools of thought on state behavior for this purpose: space nationalism, technological determinism, global institutionalism, and social interactionism. To map counterspace capabilities, the authors have noted that space weapons have been deployed while major powers focus on doctrines including sanctuary, survivability, and high ground and space control. Based on this theoretical framework, the authors conclude that space weapons may continue to exist without being disarmed, and states will continue to possess these weapons. However, no major power will declare that it has deployed weapons in outer space as it would compel other states to follow suit. Since there is no defence against satellites or space objects, any deployment of space weapons by any major power will not ensure their effective employment. Therefore, the survivability doctrine will prevail over the sanctuary, high-ground, and space control doctrine. This means that space weapons will be used for assured space deterrence, and any armed conflict will erode it if not actively pursued.

Contextualizing Space Security

Security for what, security for whom, and security to what extent are key questions explored in this book. Space security is unlike other domains such as land, air, and sea. These domains have witnessed many armed conflicts where one party was the victor while the other was being defeated. However, space warfare is relatively new, and no major war has been fought in this domain. Hence, contextualizing space security is difficult. Nevertheless, the authors reviewed space security using theoretical

perspectives such as Balance of Power (BoP), Regional Security Complex Theory (RSCT), and Revolution in Military Affairs (RMA).

Space Doctrines, Policies and Strategies: US, China, India, and Pakistan

The authors analyze the space doctrines, policies, and strategies of the US, China, India, and Pakistan. The US space doctrine follows the Five Ds: deception, disruption, denial, degradation, or destruction, to deter threats to its space assets, prioritizing "Freedom of Action in space" and "Denying Space for Others." The Chinese doctrine remains unpublished, although its White Papers emphasize technological progress, with future rivalry with the US possible due to misperceptions. India has opted to weaponize space and has tested an ASAT missile in outer space. The Indian Armed Forces Joint Doctrine (IAFJD) 2017 and Land Warfare Doctrine (LWD) 2018 highlights space as a fourth medium of warfare. Pakistan has not demonstrated any behavior or capability that indicated its intent to weaponize space; its 2002 policy advocates peaceful use and national security.

Counterspace Capabilities: US, China, India, and Pakistan

The authors examine the counterspace capabilities of the US, China, India, and Pakistan. Of 7,560 operational satellites, the US operates 5,184 satellites, China 628, Russia 181 satellites, and India has 63 operational satellites, and 27 of these satellites are for military purposes, including navigation, communication, remote sensing, and intelligence, reconnaissance, surveillance (ISR) purposes. Satellites are dual-use objects and are usually considered as space militarization capabilities. However, space weaponization capabilities include missiles, directed energy weapons (DEWs), and co-orbital missiles. The US leads space situational awareness and plans to use Lagrange Points for military outposts to counter future threats.

On the other hand, China is also pursuing advanced space militarization and weaponization capabilities, triggered by misperceptions and misunderstandings between the US and China. More recently, the

successful re-entry of the China-launched Fractional Orbital Bombardment System (FOBS) has astonished the US and led to plans for a co-orbital defense system to counter China's FOBS in the future.

Regarding India, the book gives insights into India's interexchange ability of space and missile technologies to build its long-range ballistic missile program from its space launch vehicle technologies. The utilization of space technologies to build long-range ballistic missile programs remains clandestine. India has explored space launch vehicle cooperation with the US, the former Soviet Union, Germany, and France to build its Space Launch Vehicle (SLV) program. However, this has imprints on its Intercontinental Ballistic Missiles (ICBMs) as well. Likewise, India also built its ASAT missile from its BMD and ICBM programs. The authors question India's need for ICBMs, capable of striking long-distance targets such as London, Paris, and New York when medium-range missiles can already target Pakistan. It suggests that India's development of ICBMs is aimed at countering China.

Pakistan, on the other hand, has neither shown any intent nor demonstrated any space weaponization capabilities that can verify that it has the potential to build and test counterspace capabilities. While it has the technological foundation to develop SLVs and potentially ASATs, the authors conclude that Pakistan has no interest in pursuing space weapons for its military objectives.

Emerging Space Order

The authors highlight the emerging global and regional space order, noting that the US holds preeminence in space. Presently, the operational satellites of the US are 5184, 4771 for civil/commercial use, 167 for federal government use, and 246 are used for military purposes. On the other hand, China ranks second globally with 628 satellites for civil and military purposes, while India leads regionally with 63 satellites. The authors argue that the combined effect of global and regional space capabilities and intentions of major spacefaring states forms a rule-based global, regional,

and sub-regional space order. States with advanced space militarization and weaponization capabilities can influence these rule-based orders. India has attempted to establish a sub-regional space order, but Pakistan has declined to join due to security concerns.

Space Security Trilemma in South Asia

There is an exclusive chapter on the space security trilemma in South Asia. By applying RSCT, the authors consider South Asia a superregional complex with a pattern of enmity and amity. India and Pakistan have enmity relations, and India and China also have similar relations. In contrast, Pakistan and China's relationship is based on amity.

On top of that, China and the US have adversarial relations. Interestingly, the misperception and misunderstanding dynamics between China and the US exist in space. Consequently, China views US measures in space as offensive and vice versa. This also stirs India-China relations. Finally, Pakistan comes to the end of the space chain. It produces a space security trilemma between China, India, and Pakistan, with the US's external influence affecting South Asian security.

Challenges to International Space Governance

Overall, the authors emphasize that no legally binding treaty can restrict the arms race in outer space. While the 1967 Outer Space Treaty bans the detonation of weapons of mass destruction in space, it does not prohibit the conventional weaponization of space, leaving a legal gap. In addition, writers also note that major spacefaring states are increasingly interested in lunar exploration, with over 50 countries, including India, joining the US-led Artemis Accords to explore, exploit, and use lunar resources. Meanwhile, Russia and China lead the International Lunar Research Station (ILRS) program, which includes Pakistan as a partner state. This emerging bloc formation in space has created profound challenges to international space governance.

The book offers new insights concerning space security, doctrines, policies, and strategies of major spacefaring states, including the US, China, India, and Pakistan. The authors believe the US will continue dominating space order due to its overwhelming capabilities. Conversely, China is attempting to catch up but remains behind, while India prioritizes space as a key political agenda. Pakistan is an emerging space power with modest space capabilities and is expanding its space program to meet its objectives under its Space Vision 2047. However, it still lacks adequate domestic legislation, as seen in the delay in licensing Starlink due to missing regulations for Low Earth Orbit (LEO) internet services. Pakistan does not currently have an SLV but plans to develop complete space transportation systems to meet its space objectives for the country's socio-economic development.

It is pertinent to note that in the realms of nuclear deterrence and space security, jargons play a vital role in understanding deterrence relationships, postures, doctrines, policies, and strategies. Some analysts add China to the India-Pakistan dyads from the lens of the US-China dyad, thereby hindering the independent deterrence equation in South Asia. Moreover, some analysts also project South Asia as Southern Asia to include China in the regional equation. This is methodologically incorrect as it does not project historical and strategic trajectories of South Asia. Such conceptual blending may impede the prospects of arms control in the nuclear and space domains. The book concludes that space conflict is inevitable as states will keep building counter-space capabilities to preserve their national interests in space. Despite the absence of a consensus among states on negotiating a legally-binding treaty to prevent an Arms Race in Outer Space, the desire to negotiate such an agreement under the Prevention of an Arms Race in Outer Space (PAROS) still exists.

Reviewed by Anum A. Khan, Associate Director Research, at the Center for International Strategic Studies (CISS), Islamabad.