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The Second Coming of MIRVs: The Future of

Strategic Arms Competition

August 23, 2016

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Some 18 years ago, India and Pakistan conducted successive nuclear tests, joining China as Southern Asia's three overt nuclear powers and transforming the region into a nuclear trilemma. Both India and Pakistan have developed their arsenals at a measured pace, at least compared to historical standards. Today, however, there are concerns that we could be witnessing a potential slow-moving, but cascading, arms competition in the region following China's [deployment](#) of multiple independently targetable re-entry vehicles (MIRVs), or multiple-warhead missiles, in 2015. In contrast to city-busting nuclear payloads sufficient to hold population centers at risk, MIRVs enable a single missile to carry several nuclear warheads, potentially to strike several distinct targets. MIRVs are particularly destabilizing because they enable the possessor state to target an adversary's nuclear assets in a preemptive first strike.

Between the late 1960s and mid-1970s, the United States and the Soviet Union inducted MIRVs into their nuclear arsenals, moves that encouraged massive growth in warhead stockpiles and led both sides to entertain counterforce targeting and nuclear warfighting scenarios. If the Cold War competition is any guide, the reemergence of MIRVs could put strategic stability in Southern Asia to the test. Indeed, a recently released Stimson Center book — [The Lure and Pitfalls of MIRVs: From the First to the Second Nuclear Age](#) — concludes that India and Pakistan may follow China in deploying multiple-warhead missiles just as the Soviet Union sought to match U.S. capabilities during the Cold War.

Such technical discussions often remain confined to the nuclear security community, but the second coming of MIRVs contains broader implications for international security. Whether MIRV developments escalate into arms races over the next decade will depend on the influence of five critical variables: perceptions, doctrine, management, deliberations, and costs.

Perceptions

States care about how others perceive nuclear platforms as much as they care about their actual usefulness. Theories of international politics expect material interests to trump non-material preferences under conditions of intense security pressure, but the Cold War experience demonstrates that states sometimes make foreign policy choices independent of objective military utility.

In our new book, Brendan Rittenhouse Green and Austin Long [show how](#) the desire to influence perceptions of geopolitical value or the arms balance drove U.S. policymakers to field MIRVs during the Cold War, rather than “objective military significance.” In essence, the United States believed that maintaining the nuclear balance in terms of capabilities mattered because it militated the Soviet willingness to enter into a war with the United States while strengthening American alliances in Europe. Deterrence and reassurance hinged as much on perceptions as material realities.

Second nuclear age powers may employ similar logic and discount the notion that fixed numbers of weapons are sufficient for deterrence. Rising powers like India may acquire advanced capabilities to affect adversary calculations, augment international prestige, or achieve broader diplomatic goals. Rajesh Basrur and Jaganath Sankaran [aver](#) that Indian leaders are determined to obtain MIRVs not so much for military purposes, but because the mere possession of such capabilities confers a currency of prestige and might prod China to recognize India as a major power with a better bargaining position in future engagements.

Understanding these perception- and prestige-based motives is critical, though dissuading states’ pursuit of MIRVs and other counterforce capabilities will be challenging to say the least.

Doctrine

Development of new military technologies does not necessarily mean shifts in strategic doctrine, but adversaries may misread this since nuclear capabilities often have offensive and defensive uses that are difficult to [differentiate](#). This hazard is present with MIRVs because affixing multiple warheads to missiles could mean a state is either seeking a first-strike capability or reinforcing its ability to

conduct a retaliatory second strike, which has come under duress. In short, the meaning of MIRV developments is still quite open to debate.

The most common interpretation of Chinese MIRVs is that they might imply the adoption of a more offensive doctrine. However, Jeffrey Lewis [suggests](#) in our new book that the Chinese may have embraced some technologies associated with counterforce without thinking through the strategic implications or altering their existing nuclear strategy of deterrence by punishment, which emphasizes countervalue retaliation against cities. Others have argued that MIRVs, penetration aids, and related technologies are intended to shore up [assured retaliation](#), which some Chinese scholars worry is currently an [uncertain retaliation](#) posture lacking credibility. From this vantage point, MIRVs indicate that China wants to overcome nascent U.S. missile defenses and bolster perceptions that it possesses a modern arsenal, which Chinese leaders believe enhances the credibility of its deterrent.

The point is that new platforms are not imbued with any inherent meaning. This is especially the case with MIRVs, which enable offensive and defensive nuclear options. The danger of misconstruing new military technologies is particularly high in a strategic environment prone to inter-state wars, crises, and hyperbolic threat inflation. Appreciation of new technology's multiple meanings along with transparent discussion can help to reduce misinterpretation of intentions.

Management

Political leaders' supervision of strategic establishments can have far-reaching implications for nuclear doctrine and regional stability. Poor management of strategic architectures and nuclear portfolios can incentivize institutions within a state to pursue their own prerogatives while jeopardizing national security. Organizational pathologies can create principal-agent problems that undermine leadership intentions or nuclear doctrine. These could send confused or even dangerous signals to an adversary.

Some [argue](#) that the Indian civilian leadership's mismanagement of the strategic portfolio and exclusion of the military from nuclear decisionmaking leaves the research and development agency – the Defense Research and Development Organization (DRDO) – unchecked to pursue missiles and weapons systems without concern for strategic and geopolitical consequences. Indeed, DRDO is working on MIRVs and other strategic technologies even though Indian prime ministers have not weighed in on whether such capabilities should be designed, tested, and deployed. DRDO's semi-autonomous moves have [raised](#) questions about India's commitment to a restrained nuclear doctrine and provoked Pakistani fears over survivability of its strategic forces.

Political leaders in Pakistan are also deferential in managing nuclear affairs and weapons development matters. In the book, Feroz Khan and Mansoor Ahmed [contend](#) that Pakistan's political leaders are unwilling to challenge the military-scientific consensus on strategic capabilities let alone debate these issues in public, potentially rendering Pakistan's nuclear strategists and force planners less sensitive to other states' concerns and threat perceptions.

Despite a different civil-military architecture, Soviet policymakers also ceded weapons procurement and development decisions to other entities. According to Alexei Arbatov and Vladimir Dvorkin, this was because the political-military leadership [dealt](#) almost exclusively with "big picture" issues related to nuclear weapons employment. Consequently, Soviet force planners were able to push forward with launch-on-warning technologies despite the fact that the leadership had not considered whether these systems altered nuclear doctrine or increased the likelihood of an accidental nuclear exchange.

Proactive management to check dangerous signals inherent in certain technologies could help stabilize the strategic competition in Southern Asia today.

Deliberation

Internal and external exchanges on security tradeoffs and arms control may dampen the pernicious effects of strategic competition. A broad and inclusive internal deliberation on the development and employment of new technologies like MIRVs can force states to weigh the costs, risks, and negative externalities. The historical record suggests that the United States engaged in vigorous strategic debates inclusive of civilian leadership, the military, and the intelligence community over the relative merits of multiple-warhead missiles. Arbatov and Dvorkin argue, by contrast, that the Soviet government dismissed risks and brooked no discussion of the possibility that MIRVing could trigger security dilemmas and arms race spirals.

Under certain conditions, external dialogues on strategic issues can provide a valuable forcing function for a state to seriously grapple with, prioritize, and clarify its interests amongst competing internal factions often operating on distinct agendas. China may be reluctant to engage in such conversations with the outside world at present, but that should not stop the United States from trying. Lewis points out that China's participation in the Comprehensive Test Ban Treaty negotiations in the 1990s proved valuable because it functioned as a mechanism for internal resolution of disputes within the state.

The indirect clarifying effect of dialogue can help avoid unintended competition among adversaries. A [non-traditional approach](#) to resolving inter-state conflict might embrace arms control not as a constraint, but as a tool to manage weapons systems, reconcile tradeoffs, and enhance national defenses.

Costs

States may be forced to choose between robust nuclear arsenals and sustained economic growth. MIRVing at any level demands costly investments up front to master re-entry technology and produce fissile material, warheads, and delivery vehicles. A move down the path of counterforce encounters an infinite number of military targets and requires the development of intelligence, surveillance, and reconnaissance (ISR) platforms for discrete targeting. It is these ISR costs in particular that may prove most prohibitive for states. Basrur and Sankaran estimate that the cost of a satellite array for 24/7 observation of a single missile base could cost \$6.4 billion, more than half of what the Indian budget has [allocated for procurement](#) this year.

As it did to the Soviet Union, the fiscal costs of intense arms competition could pose significant economic challenges for second nuclear age powers. Though difficult to compare different economies across decades, available [data](#) normalized across all countries to 1990 dollars reveals the conundrum. China's gross domestic product (GDP) per capita in 2010 (\$8,032) is half of what the United States' was when it began fielding these weapons in the 1970s (\$15,030) while India's (\$3,372) and Pakistan's (\$2,494) are even lower today than the USSR's GDP per capita in 1970 (\$5,575). As the USSR sought to compete with the United States over MIRV deployments around 1970, its GDP per capita growth slowed to a quarter of its rate from the previous 20 years and half the rate of U.S. growth from 1970-1990 until it ultimately collapsed.

The economic tradeoffs tell an important story. The second nuclear age states—already contending with major conventional force modernization projects and internal security challenges—would likely have to siphon resources from their economic development agenda in order to compete in counterforce capabilities.

Lessons for Strategic Observers

MIRVs undoubtedly up the ante in Southern Asia — and China, India, and Pakistan must take these risks seriously and adjust course to avoid a destabilizing arms race. That being said, all strategic observers must be cognizant of states' complex motives in pursuing such capabilities while acknowledging the difficulty interpreting the meaning for doctrine and posture. Threat assessments benefit from considering the effects variables such as management, deliberations, and fiscal tradeoffs could have on the spread of MIRVs and broader security outcomes in a complex, evolving international environment.

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