

Stanton Nuclear Security Fellows Seminar

PANEL 2: Modeling the Dynamics of Nuclear Security

1. Eliza Gheorghe, BCSIA

Proliferation Among Allies: Frenemies, Reactive Proliferation, and the Nuclear Umbrella

Objective

My project examines the intra-alliance dynamics of nuclear proliferation. The aim of my research is threefold: conceptual innovation; empirical discovery; and policy relevance. First, I seek to develop a theoretical framework for understanding reactive proliferation among allies, drawing on both a large-N study and historical research. Second, I will use this conceptual framework to explain both historical episodes and recent developments in areas of concern, such as East Asia or Central and Eastern Europe. Thirdly, I will offer policy recommendations for how to prevent or stop reactive proliferation among allies.

Overview

The orthodox narrative on nuclear dominoes holds that the emergence of a nuclear enemy and the absence of a security umbrella prompts countries to proliferate (Reed and Stillman, 2009; Bleek, 2010; Miller 2014). The classic example is the nuclear cascade spurred by China's nuclear acquisition, which engulfed Japan, Taiwan, and South Korea in East Asia, and India and Pakistan in South-West Asia. The different courses East Asia and South West Asia took seem to offer the perfect empirical validation for the conventional thinking about Extended Nuclear Deterrence (END): U.S.-allied states did not get dragged into a nuclear cascade, while non-aligned states could not be prevented from proliferating. Several studies show that alliances, through the extension of a security umbrella by a superpower over its junior partners, dampen or even inhibit the nuclear ambitions of the weaker member states (Tertrais, 2011; Knopf, 2012; Gavin, 2015). The belief in the non-proliferation effects of alliances represents one of the main pillars of U.S. security strategy, with tremendous implications for how Washington plans, funds, and carries out its foreign policy. In the absence of NATO, allies in Central and Eastern Europe (Poland especially) would resort to an independent nuclear deterrent to deal with an increasingly assertive Russia. Also, without NATO's protection, it is conceivable that Turkey would proliferate in response to Iran's nuclear latency, not to mention weaponization. In Europe, the Middle East, and East Asia, reassuring allies has been Washington's main priority.

Yet, the inhibiting effect of extended nuclear deterrence (END) on the spread of nuclear weapons has long been called into question (Singh and Way, 2004; Jo and Gartzke, 2007; Kroenig, 2009; Fuhrmann, 2009; Fuhrmann and Sechser, 2014). Security assurances may not be enough to dissuade a proliferator from going down the military nuclear path because of credibility problems. The defender (a superpower

armed with nuclear weapons) will find it difficult to convince its junior allies that it will come to their rescue if doing so puts its own territory and population at risk. Charles de Gaulle famously argued that no U.S. president will allow New York to be obliterated in the defence of Paris. In the absence of effective communication about the resilience of the nuclear umbrella, junior allies are left thinking their only chance to survive a confrontation with a nuclear rival resides in building their own nuclear deterrent.

Credibility problems stem not only from the defender's rapport with an enemy, but also from the ambivalent relations that exist between countries covered by the same nuclear umbrella. Formal alliances not only protect their members against an external threat, but are also supposed to smooth relations among their adherents. The dampening effect of security umbrellas on reactive proliferation weakens if the beneficiaries of the defense pact are not treated equally by the protector, and if junior allies are hostile towards one another. Therefore, it is not only formal enemies who can trigger proliferation cascades but also ambivalent allies (which I call frenemies). A concept borrowed from psychology, 'frenemy' helps describe complicated state-to-state relationships, such as over-competitiveness despite being in a formal alliance, attempts to deter, sabotage, or undermine partners or allies, or voicing public criticism so as to secure reassurances from the country being vilified. Frenemies emerge in situations where the laws of transitivity no longer apply. For instance, just because countries A and B find themselves in an alliance with the same superpower, it does not follow that they will be friends with each other. The behaviour in which frenemies engage ranges from disagreements and being at odds on important issues, to rivalry, competition, or outright hostility. They will refrain from engaging in prolonged military conflict with one another, but they will fiercely compete on national security-related issues. Yet this behaviour does not prevent them from carrying on with their exchanges and interactions, because this type of relationship rests on a 'transactional' friendship, which explains why they remain in these formal alliances.

Research Design

I seek to examine the relationship between frenemies and reactive proliferation using mixed methods. Relying on a combination of large-N quantitative analysis and case studies, I argue that states located in the proximity of a proliferating frenemy are more likely to explore, pursue, and acquire nuclear weapons. I will first test this hypothesis with the help of Cox proportional-hazard models. Then I will draw on recently declassified archival documents to examine three examples of reactive proliferation involving frenemies: Britain and France; Japan and South Korea; Poland and Romania. I will also look at negative cases – countries that appear to match the frenemy profile: West Germany (*vis-à-vis* France), Yugoslavia (*vis-à-vis* Romania), Brazil and Argentina. At first glance, these examples suggest gaps in my theory, since they would naturally follow the same logic as the three main dyads analysed. In reality, it is not so much that my theory fails to predict these cases, but they actually do not fit the category of 'frenemy' that I focus on. West Germany's example does not disprove my theory, because, as recent literature has shown, it did not have as much room for manoeuvre as France or South Korea. As Peter Katzenstein put it, West Germany was a semisovereign state, lacking the ability to pursue an independent nuclear deterrent. Yugoslavia, Brazil, and Argentina also do not refute my theory because they do not fall under the nuclear umbrella of a superpower.

My project will examine the causes of the rivalry in each dyad and then look at the resulting level of nuclear development. Three broad factors may put these countries at odds with one another: a history of bilateral disagreements and tensions; regional policies; and relations with the superpower. For example, the frequent clashes between Winston Churchill and Charles de Gaulle, when the General found refuge in London during the Second World War, and Washington's flirtations with the Vichy regime during that time, can explain France's distrust towards both the British and the Americans. In the case of Japan and South Korea, the preferential treatment Tokyo received from the US, Japan's secret dealings with North Korea, and the legacy of Japanese imperialism in Asia made Seoul see Japan more as an aggressor than a partner. In early 1970, Japan, according to the authorities in Seoul, even assisted Pyongyang with causing a cholera epidemic in South Korea. In the eyes of the South Koreans, the cholera outbreak represented a biological attack facilitated by a country which formally was their ally. The Poles and the Romanians clashed over Poland's influence in the Eastern bloc and its privileged relationship with the Soviet Union. Poland, together with East Germany and Czechoslovakia, sought to assign Romania a second-class status within both organizations, triggering Bucharest's resentment.

Expected Results

The logic of proliferation cascades implies that the two countries in each dyad will try to match each other's level of nuclear weapons development. Nuclear military programs develop in three stages: exploration, pursuit, and acquisition. I expect the countries I am examining to behave in the following way: acquisition of the atomic bomb by Britain made France obtain its own arsenal; Japan's pursuit of an independent nuclear deterrent led South Korea to pursue its own nuclear weapons program; Poland's exploration of the military nuclear option prompted Romania to start looking into nuclear weapons. I expect the decision to pause or mothball a nuclear program to be more the result of the strategic interaction between the two junior partners than between the superpower and the subordinate allies. This dynamics would help explain why South Korea or Romania did not acquire nuclear weapons. Matching the frenemy's level of nuclear weapons development would suffice to alleviate security and prestige concerns. I therefore expect to find that security reassurances from the superpower would not make a difference for the proliferating junior allies. Doubling down on proliferating junior partners may actually prove counter-productive. Strengthening alliance commitments by increasing deployments (conventional or nuclear), offering inducements, or using coercion to stop each of them from proliferating would be perceived through the same triangular lens that caused the intra-alliance domino in the first place. For example, South Korea resents Washington's efforts to keep proliferation in check because it implies that Seoul cannot develop reprocessing capabilities. The South Korean authorities do not miss an opportunity to point to the discriminatory approach adopted by the U.S. vis-à-vis Japan, which has maintained a nuclear threshold status since the 1970s. Any inhibiting measures adopted by Washington vis-à-vis South Korea's nuclear program are interpreted as being advantageous for Japan, which is likely to aggravate tensions between Seoul and Tokyo. In a nutshell, I expect existing institutional and security frameworks to prove too weak to contain a spiral of proliferation among alliance members.

Final Product

This study forms the basis of my second book project, which I began in the fall of 2014. Before I finish the book manuscript, I intend to publish at least one article in a peer-reviewed academic journal, highlighting the conceptual framework I am developing. I will also seek to draw attention to my findings about reactive proliferation inside Cold War alliances by discussing them in parallel with current developments in East Asia, Central and Eastern Europe, and the Middle East in opinion pieces for large-audience media.

Policy Implications

The relationship between frenemies and proliferation cascades holds important lessons for policy makers. The framework I will develop can help predict how certain junior allies (especially the ones facing a double threat – one from an external enemy, and one from an internal enemy) will behave in times of crisis. This research can better prepare policy-makers for interactions with junior allies caught in a reactive proliferation cycle. My research would be relevant not only to decision makers in the foreign policy and security establishment in the country providing security (the Pentagon and the State Department in the U.S., for example), but also for government officials in proliferating countries. Optimists may argue that the solution for proliferation among allies is stronger institutions. The preliminary findings of my research suggest that more of the same would not have the expected beneficial effects. Attempts to eliminate the causes of friction at a local and regional level through multilateral efforts is likely to backfire. Creating additional layers of bureaucracy will not solve deep-seated fears and insecurities. The two countries caught in this vicious circle cannot be reassured through institutions because they cannot predict which one will benefit from the superpower's protection in case a conflict between them erupted. Any perceived preferential treatment given to one of the two junior allies risks spiking the competition between them and therefore accelerates the falling of the nuclear domino pieces.

Drawing on the historical record, the solution my project proposes is a rapprochement with the proliferators' main enemy. Such a move may scare the two proliferating junior partners into cooperation. Re-focusing intra-alliance relations away from the internal threat towards the external threat would compel junior allies to toe the superpower line. Playing on the proliferators' fears of abandonment could stop the domino from falling. As suggested above, simple coercion is not enough: cutting down assistance, or scaling down military deployments may not impress the junior ally. Cutting aid to the junior ally and providing it to its principal adversary, on the other hand, is more likely to bring about a change of heart. The superpower has to demonstrate ruthlessness and decisiveness; above all, it must show that it needs the junior partners much less than the junior partners need it. For example, in the second half of the 1970s, South Korea and Japan stopped proliferating when the U.S. gave clear signals that it would normalize relations with North Korea. Such a bold move presents two important risks: it can lead to more regional instability, and it can persuade the junior allies to get an independent nuclear deterrent. To prevent such a scenario from occurring, the superpower needs to send a clear message to the proliferating junior partner that the tables can be turned and that alliances are not forever. In its quest to stem proliferation, the superpower should capitalize on the principle that a junior

ally would always prefer an unequal partnership to no alliance at all. Seen from this perspective, the fact that not all allies are created equal would appear as not such a bad thing after all.

2. Nina Silove, CISAC

The Role of Nuclear Weapons in U.S. Grand Strategy

There is a widely-held view that the U.S. has failed to plan grand strategically in the post-Cold War era. In an edited volume on the subject of strategic planning, Melvyn Leffler and Jeffrey Legro conclude that “[o]verall there appears to have been little coordinated political-military-economic strategy in the U.S. government in the post-Cold War period.”¹ Aaron L. Friedberg similarly argues that “the U.S. government has lost the capacity to conduct serious, sustained, national strategic planning.”² Scholars have further noted that the White House lacks an effective planning infrastructure,³ there is a dearth of “sophisticated strategic thinkers” among government officials,⁴ and strategic planning is “stove-piped” in the bureaucracy.⁵ Although this view is widely-held, there has been little systematic investigation of the quality of U.S. strategic planning since the end of the Cold War. This is precisely what I propose to examine.

This project investigates the existence of a potential “stove-pipe” between planning conventional military strategy and planning in relation to nuclear force posture. There has been little research on the extent to which strategy in these two spheres are integrated with one another. Two observations, which I will elaborate upon below, indicate the presence of a stove-pipe. The first is the apparent lack of coordination between the Defense Strategy Review and the Nuclear Posture Review in 2001. The second is an observed disconnect between the Quadrennial Defense Review and the Nuclear Posture Review in 2010. These observations were made in the course of my dissertation research, which focused on the question of whether the U.S. had developed plans at the grand strategic level to respond to China’s rise. Contrary what would be expected according to the existing scholarship on the subject, my dissertation concluded that the U.S. instituted a long-term, military-diplomatic strategy in response to China’s rise. The question that follows from this conclusion is how well integrated this military-diplomatic strategy was with other spheres of statecraft. The observed disconnects between conventional military strategy and nuclear posture suggest that – although there may have been coordination between the military and diplomatic spheres – that coordination did not extend into the sphere of nuclear policy. Such a stove-pipe, if it exists, has the potential to produce conventional and nuclear strategies that operate at cross-purposes, thereby reducing the likelihood of either strategy achieving its goals.

¹ Melvyn P. Leffler and Jeffrey W. Legro, “Conclusion: Strategy in a Murky World,” in *In Uncertain Times*, ed. Melvyn P. Leffler and Jeffrey W. Legro (Ithaca: Cornell University Press, 2011), pp. 179-198: 194.

² Aaron L. Friedberg, “Strengthening U.S. Strategic Planning,” in *Avoiding Trivia: The Role of Strategic Planning in American Foreign Policy*, ed. Daniel W. Drezner (Washington, DC: Brookings Institution Press, 2009), pp. 84-97: 84.

³ *Ibid.*, 51-52.

⁴ Jeremy Suri, “American Grand Strategy from the Cold War’s End to 9/11,” *Orbis*, Vol. 53, No. 4 (2009), p. 613. See also Michael J. Mazarr, “The Long Road to Pyongyang - A Case Study in Policymaking Without Direction,” *Foreign Affairs*, Vol. 86, No. 5 (2007).

⁵ Eric S. Edelman, “The Strange Career of the 1992 Defense Planning Guidance,” in *In Uncertain Times*, ed. Melvyn P. Leffler and Jeffrey W. Legro (Ithaca: Cornell University Press, 2011), pp. 63-77: 76. See also Josef Joffe, “‘Bismark’ or ‘Britain’? Toward American Grand Strategy after Bipolarity,” *International Security*, Vol. 19, No. 4 (1995).

Observation 1: The Defense Strategy Review and the Nuclear Posture Review 2001

The first observation that motivates this research is the apparent lack of coordination between the foundational document of the military-diplomatic strategy in response to China's rise, the Defense Strategy Review (DSR), and the Bush administration's Nuclear Posture Review (NPR). The DSR was drafted in early 2001 by the Department of Defense in consultation with the Department of State and the president. Unlike the Defense Planning Guidance 1992, which has received a great deal of attention from scholars and analysts, very little of the Defense Strategy Review was leaked to the press and, until my work is published, the now declassified documents will not have been quoted publicly. It was, however, an important post-Cold War planning document and provided the foundation for U.S. strategy in response to China's rise. The goal of the strategy, which was further developed in detail over 2001-04, was to preserve the existing power balance in Asia, in which the U.S. held the superior position, by "dissuading" China from competing with the U.S. militarily.

The drafting of the NPR occurred simultaneously with the drafting of the DSR, yet the two processes were neither formally nor informally synchronized with one another. As a result, the two plans echoed each other superficially but diverged substantively. The DSR was based on the assumption that there was a sensitive action-reaction relationship between the U.S. and China in the conventional military realm. As such, the strategy sought to calibrate carefully U.S. acquisitions and force posture to dissuade China from competing with the U.S. The NPR, in contrast, did not assume that the U.S. was engaged in a sensitive action-reaction relationship with China.⁶ In a general sense, the NPR aimed to retain a number of nuclear weapons sufficient to dissuade China from attempting to achieve nuclear parity with the U.S. Beyond this general aim, however, the NPR assumed that Chinese officials were "going to be doing what they're going to be doing anyway," regardless of U.S. nuclear policy.⁷ Specifically, the size of China's nuclear arsenal was not assumed to be sensitive to the development of U.S. missile defense systems.⁸

It is impossible to determine conclusively which of the DSR or NPR's assumptions about China were correct, given the limitations on available information about China's nuclear posture. China did not compete with the U.S. for quantitative or qualitative nuclear parity, so in this general sense the NPR's assumption was accurate. There are, however, reasons to believe that China's nuclear posture was highly sensitive to U.S. missile defense. As Brad Roberts noted at the time, merely as a matter of strategic logic China "may well conclude [after missile defense deployment] that reliable restoration of the status quo ante requires a very large force expansion."⁹ A few years later, People's Liberation Army Major General Yao Yunzhu argued that missile defense was "by far the most significant factor impacting

⁶ Keith B. Payne, "Action-Reaction Metaphysics and Negligence," *The Washington Quarterly*, Vol. 24, No. 4 (2001).

⁷ Department of Defense, "Secretary Rumsfeld Interview with Group of Reporters," *News Transcript*, July 13, 2001, available at <http://archive.defense.gov/Transcripts/Transcript.aspx?TranscriptID=1487> (accessed September 10, 2015).

⁸ Payne, "Action-Reaction Metaphysics."

⁹ Brad Roberts, *China-U.S. Nuclear Relations: Which Relationship Best Serves U.S. Interests?* (Alexandria, VA: Institute for Defense Analyses, 2001).

China's nuclear calculus."¹⁰ For the purpose of this project, however, the primary research question is not which of the DSR or NPR were accurate in their assumptions about China, but whether in fact there was a lack of coordination between these two processes, whether that stove-pipe persisted, and the effect it had, if any, on the coherence of U.S. strategy in response to China's rise.

Observation 2: The Quadrennial Defense Review and the Nuclear Posture Review 2010

The apparent lack of coordination between broader military strategy and nuclear posture as they related to China appears to have manifested again in 2010 during the development of the Quadrennial Defense Review (QDR) and the NPR for that year. The NPR 2010 identified "strategic stability" with China as a primary goal.¹¹ The QDR, in contrast, introduced a doctrine with a potentially high escalation risk in relation to China called "Air-Sea Battle." The QDR 2010 stated the aim of Air-Sea Battle as being to counter "adversaries equipped with sophisticated anti-access and area denial (A2/AD) capabilities."¹² China was the state with by far the most advanced A2/AD capabilities. In shying away from mentioning China directly, the QDR was "a little bit politically correct to avoid antagonizing China" in the opinion of former Undersecretary of Defense for Policy Eric S. Edelman, who was a member of the Congressional Independent Review Panel for the 2010 QDR.¹³

One of the key characteristics of Air-Sea Battle was the use of conventional kinetic plus space, cyber, and electronic warfare capabilities to "blind" the adversary by targeting C4ISR (Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance).¹⁴ As applied to China, such measures would have clear potential to be interpreted as an attack on China's nuclear capabilities because – among other reasons – China does not separate nuclear and conventional command and control.

Any serious conflict with China would present an escalation risk, so the mere presence of such a risk in the application of a war-fighting doctrine to China does not automatically suggest the presence of a planning stove-pipe. Indeed, many of the tenets of Air-Sea Battle were likely present in existing U.S. war plans for China contingencies. What is indicative of a stove-pipe is that Air-Sea Battle was apparently developed without due consideration of the how the dynamics of nuclear escalation may apply to the concept in practice. Absence of evidence is not evidence of absence, but there are reasons to suspect that the development of the doctrine was stove-piped in this respect. For example, suggestive of both the escalatory potential of Air-Sea Battle and that its development may not have been well coordinated with nuclear strategy is that the 14-page 2014 Master Plan of the Global Strike Command only

¹⁰ Yao Yunzhu, "Chinese Nuclear Policy and the Future of Minimum Deterrence," *Strategic Insights*, Vol. 4, No. 9 (September 2005).

¹¹ Department of Defense, "Nuclear Posture Review Report," April 2010, available at <http://archive.defense.gov/npr/docs/2010%20Nuclear%20Posture%20Review%20Report.pdf> (accessed October 3, 2015).

¹² Department of Defense, "Quadrennial Defense Review Report," 2010, available at http://www.defense.gov/qdr/images/QDR_as_of_12Feb10_1000.pdf (accessed October 29, 2014).

¹³ Eric S. Edelman, Interview by author, Washington, D.C., September 2, 2010.

¹⁴ See generally Air-Sea Battle Office, *Air-Sea Battle: Service Collaboration to Address Anti-Access & Area Denial Challenges* (May, 2013) and Aaron L. Friedberg, *Beyond Air-Sea Battle: The Debate over US Military Strategy in Asia* (New York: Routledge, 2014), pp. 82-84.

mentioned Air-Sea Battle once. That mention came in the context of noting that upgrades to the Command's conventional *and nuclear* capabilities will "support" the Air-Sea Battle concept.¹⁵ The foundational document for the Air-Sea Battle doctrine did not, however, mention nuclear issues at all.¹⁶

The above observations give rise to the suspicion that there is a stove-pipe between planning conventional military strategy and planning nuclear strategy and force posture. This would have significant implications for the capacity of the U.S. to achieve its stated goals in the military and nuclear spheres. It would also have serious implications for international security. By way of illustration, the examples above suggest that the U.S. may have inadvertently encouraged China to expand its nuclear arsenal and that the U.S. military may have unwittingly adopted a military doctrine without due consideration for its escalation risks.

Sources

This project will rely on access to a private archive of declassified documents from the George W. Bush administration, which contains a rich history of the strategic planning processes of that administration, extensive interviews with the senior officials responsible for the relevant planning processes, and a wide range of other primary and secondary source materials.

Target audience and publications

This research will be published in a number of formats. It will be included in a book on the broader subject of U.S. strategic planning that will target primarily an academic audience. Cambridge University Press has indicated initial interest in the book.

The research will also be reported in shorter policy pieces and OpEds for outlets that target policymakers and the general policy-aware public.

Sections of the previous project have been informally circulated to relevant offices within the U.S. Executive This project will likely similarly attract the interest of policymakers and it will be made available to them in appropriate formats as opportunities arise.

¹⁵ Air Force Global Strike Command, "Strategic Master Plan," 2014, available at <http://www.defenseinnovationmarketplace.mil/resources/AFGS-2014StrategicPlan.pdf> (accessed October 3, 2015), emphasis added.

¹⁶ Air-Sea Battle Office, *Air-Sea Battle*.

3. Tristan Volpe, CARNEGIE

Proliferation Persuasion: Coercive Bargaining with Nuclear Technology

Objectives

My research explains the use of nuclear technology as a bargaining chip in world politics. The project builds a theory for explaining when countries are able to leverage the threat of nuclear proliferation to compel concessions from the United States, and uses this framework to assess the track record of nuclear diplomacy over the last seventy years. By clarifying how U.S. allies and adversaries leverage steps toward the bomb for political gain, my findings will pinpoint policy options for practitioners seeking to prevent the spread of sensitive nuclear technology and weapons.

Overview

Why do states wait for prolonged periods of time with the technical capacity to produce nuclear weapons? Scholars have long observed states develop uranium enrichment or plutonium reprocessing capabilities, only to then delay or forgo the acquisition of nuclear weapons.¹ The ability to produce the fissile material needed for a nuclear weapon is a chokepoint because enrichment and reprocessing (ENR) technology is difficult to acquire and operate. As a result, just a few dozen states ever built the ENR facilities required to proliferate.² Throughout the Cold War, a handful of countries moved into the ENR zone, but largely abstained from nuclear weapons. More recently, North Korea, Libya, and Iran acquired ENR capabilities yet paused at various stages of development. The decision to wait with a vulnerable nuclear program in lieu of a strategic deterrent seems odd from a national security perspective. Proliferation signals an impending shift in the balance of power, thereby motivating others to levy sanctions, target nuclear infrastructure, or initiate militarized conflict to resolve outstanding disputes.³

Scholars and analysts of nuclear proliferation offer four solid but ultimately incomplete explanations. First, a state with the technical capacity to proliferate may not want to defect from the nonproliferation regime, leave the security umbrella of an allied patron, or incur various risks and penalties of deploying a new nuclear force. Exercising restraint may avoid these consequences.⁴ Second, a nuclear aspirant can defray some of these costs by acquiring the ability to produce many nuclear weapons if the decision is made to proliferate. As a result, the state pauses to resolve outstanding technical problems and build up its breakout capacity.⁵ Third, some countries seek ENR technology to harvest the energy security returns from a full nuclear fuel cycle, and go to great lengths to reveal civilian objectives. Fourth, ambivalent governments without a clear strategic plan often develop ENR capabilities but avoid making the decision to operationalize nuclear weapons into a defense posture.

I contend that these explanations miss a critical piece of the puzzle. States often wait with ENR technology because it provides coercive bargaining advantages. Since nuclear weapons are the 'great equalizers' among nations, proliferation poses high costs to other states. Adversaries suffer a loss in relative power. With only a few nuclear weapons, a state can undercut the power projection capabilities of a superior rival by creating a new strategic calculus. Within an alliance, protégé proliferation increases

the risk of entrapment and restricts a patron's freedom of action. Rather than endure these costs, states prefer that others not acquire nuclear weapons. Yet this opposition to nuclear weapons creates an opportunity ripe for coercive diplomacy. Once a state possesses ENR technology, it can issue a credible threat to proliferate if a target does not comply with demands. A targeted nation may capitulate if the challenger promises to exercise indefinite nuclear restraint.

I marshal new primary source evidence to identify episodes in the historical record when states made clear decisions to use ENR technology as a bargaining chip. In 1975, the US intelligence community observed a handful of allies use emerging nuclear fuel cycle technology to gain leverage over Washington. Most notably, Italy and Japan played up the prospect of going nuclear in the 1960s to coax compliance with demands for enhanced military assistance and territorial reversion of Okinawa, respectively. This behavior led the Central Intelligence Agency to conclude, "Future nuclear politics will almost certainly include states which will exploit their threshold positions, as much or more than their actual capabilities ... such cases are likely to become more common."⁶ The prediction proved prescient. Pakistan modulated nuclear ambitions to enhance military support from the Carter and Reagan Administrations. North Korea blackmailed the US for concessions in the early 1990s. In 2003, Libya traded away its enrichment capacity for sanctions relief, while Iran began negotiating with its nuclear program to change an unfavorable status quo. Since a diverse range of states practiced this sort of proliferation persuasion, my research meets a need to explain the logic and practice of coercive diplomacy with nuclear fuel cycle technology.

When does the capacity to produce nuclear weapons offer a bargaining advantage? If the success of coercive diplomacy rests on the interaction of credible threats and assurances, then challengers with nuclear technology must solve a dilemma. The proliferation threat should put enough pressure on the United States to comply, but not so much that the challenger must pay high costs to make a believable promise of nuclear restraint. This fundamental tradeoff between the credibility of proliferation threats and assurances creates a Goldilocks zone for reaping the most leverage over the United States.

When it comes to cutting a deal, my central claim is that there is an optimal amount of nuclear technology. With too little technology, the threat to proliferate is not believable. The country must have some nuclear capabilities in place to follow through on the threat within a short period of time. Otherwise any leader could conjure up a nuclear weapons program with the hope of gaining leverage over the United States. On the other hand, if the country builds too much capacity to produce nuclear weapons, then it becomes too difficult to make a nonproliferation promise. The requirements for the deal go up as a country moves towards the bomb. To be sure, a nation could always take steps away from the bomb if so desired. The problem is that the domestic political costs of reversing course tend to increase because nuclear programs exhibit considerable path dependency and generate lock-in effects over time. As a result, the leadership may become less willing to constrain its nuclear program the more it matures into an actual weapons capability.

Nuclear technology thereby provides the most leverage when a country's leadership can make credible threats to go nuclear, while still reassuring the United States that compliance will be rewarded with nuclear restraint. A country is most able to make such a mix of threats and assurances when the nuclear

program first acquires the ability to produce fissile material. The threat of proliferation is potent enough at this stage that both adversaries and allies will be able to exert considerable pressure on Washington to comply with a wide range of demands. But at the same time, the costs of cutting a deal are not prohibitively high.

Research Design

This project employs a qualitative research design that fuses a deductive theory with historical case studies. I draw on the logic of crisis bargaining to craft a theory of coercive bargaining with nuclear technology that is grounded in the actual process of producing nuclear weapons. Since the theory identifies a state's level of technology as the key causal variable driving the outcome of negotiations, I establish technical signposts as a clean and rigorous method for selecting cases from the historical record. This allows me to vary regime type, relationship with the United States, and bargaining demands to focus on three sets of cases that represent the full spectrum of technical progress towards the bomb.

First, I plan to study countries with too little technology to make a credible threat of proliferation. South Korea in the 1970s and Saudi Arabia in 2015 are excellent candidates. Archivists recently unsealed a trove of primary source documents related to secret negotiations between the US and South Korea over Seoul's threat to proliferate in 1975. For the Saudi case, I will conduct interviews with US officials and their counterparts in the Gulf to supplement the available source material. Second, I plan to interview key US participants who negotiated with countries that possessed too much technology to cut a deal on the cheap – notably North Korea during the Six Party Talks in 2007. Finally, I will draw from archival and secondary sources to examine how Japan in the 1960s and North Korea in the 1990s were able to bring just the right amount of nuclear technology to the bargaining table with the United States.

Expected Results

My central argument is that a country's level of nuclear technology is the primary factor driving its ability to extract concessions from the United States. I would not expect other variables – such as whether a country is a democracy or an ally – to be the main reason diplomacy succeeded or failed.

Target Audiences

The project will contribute a more fine-grained understanding of nuclear proliferation and coercive diplomacy. Academic scholars should be interested in the new bargaining theory advanced in a peer-reviewed article and the larger book project, while the findings on how specific countries leverage nuclear latency as a bargaining chip will appeal to the wider nuclear analytic community. US policy practitioners have long grappled with how to prevent the spread of sensitive nuclear technology, so I plan to publish several op-eds and a shorter article that uses this framework to suggest pragmatic solutions going forward. I will also brief key ideas from these products to senior officials and action officers with equity in nuclear proliferation portfolios for the US government, most notably offices within the Department of State's International Security and Nonproliferation Bureau and Bureau of Arms Control, Verification and Compliance, as well as the National Nuclear Security Administration's Defense Nuclear Nonproliferation programs, and members of the intelligence community.

Endnotes

¹ See George H. Quester, “Some Conceptual Problems in Nuclear Proliferation,” *The American Political Science Review*, Vol. 66, No. 2 (1972), pp. 490–97; Albert J. Wohlstetter, *Swords from Plowshares: The Military Potential of Civilian Nuclear Energy* (Chicago: University of Chicago Press, 1979); Scott D. Sagan, “The Causes of Nuclear Weapons Proliferation,” *Annual Review of Political Science*, Vol. 14, No. 1 (2011), pp. 225–44.

² Fred McGoldrick, *Limiting Transfers of Enrichment and Reprocessing Technology: Issues, Constraints, Options* (Cambridge, Mass.: Project on Managing the Atom, Harvard University, May 2011), pp. 7–10.

³ On the preventive motivation for war, see James D. Fearon, “Rationalist Explanations for War,” *International Organization*, Vol. 49, No. 3 (Summer 1995): 406. For explanations of why military attacks on nuclear programs are rare, see Matthew Fuhrmann and Sarah E. Kreps, “Targeting Nuclear Programs in War and Peace: A Quantitative Empirical Analysis, 1941-2000,” *Journal of Conflict Resolution*, Vol. 54, No. 6 (Winter 2010), pp. 831–59.

⁴ See e.g. Etel Solingen, “The Political Economy of Nuclear Restraint,” *International Security*, Vol. 19, No. 2 (Autumn 1994): 126–69; T.V. Paul, *Power Versus Prudence: Why Nations Forgo Nuclear Weapons* (Kingston, Ontario: McGill-Queen’s University Press, 2000); Nuno P. Monteiro and Alexandre Debs, “The Strategic Logic of Nuclear Proliferation,” *International Security*, Vol. 39, No. 2 (Autumn 2014), pp. 7–51.

⁵ This logic stems from the literature on new nuclear weapon states, see Peter D. Feaver, “Command and Control in Emerging Nuclear Nations,” *International Security*, Vol. 17, No. 3 (Winter 1992/93), pp. 160–87. On technical delay, see Jacques E. C. Hymans, *Achieving Nuclear Ambitions: Scientists, Politicians, and Proliferation* (New York: Cambridge University Press, 2012).

⁶ U.S. Central Intelligence Agency, “Managing Nuclear Proliferation: The Politics of Limited Choice,” Research Study, December 1975, National Security Archive, p. 39.