Teaching Deterrence: A 21st-Century Update

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ABSTRACT

Although deterrence was one of the cornerstones of the international relations field for much of the 20th century, today surveys demonstrate that most students lack even a basic understanding of this concept. Yet, in the light of recent events on the Korean Peninsula, in China, and the post-Soviet space, our civilian and military leaders continue to emphasize the need to develop and foster critical and strategic thinking on deterrence. In this essay, we ask how we can nurture the next generation of strategic thinkers and leaders without deliberately leaving teaching "defense" concepts to the military. We propose updating our reading lists to include the emerging and innovative literature on deterring 21st-century threats, and teaching with current policy documents, problem-based learning, and simulations. More specifically, we suggest strengthening students' critical thinking and writing skills through collaborative research projects and encouraging experiential learning opportunities.

Introduction

Most security-studies scholars agree today that despite its flaws, deterrence is not an obsolete scholarly relic of the Cold War. Recent events, including the uncertain fate of the Intermediate Ballistic Missile Treaty (INF), the North Korean nuclear crisis, Russian information warfare, and China's attempts to weaponize outer space, all highlight its continued real-world and academic relevance. Yet, as a recent global literacy survey demonstrates, most college-age Americans have extremely limited understanding of deterrence, which is the core concept upon which the United States seeks to achieve its foreign policy goals, responds to security threats, and builds collective defensive commitments around the world. Only 9% of respondents learned about deterrence in college, and 49% could correctly select the definition of "nuclear deterrence" in a multiple-choice test. When it comes to assuring our allies, only 28% of respondents knew that the United States is bound by a treaty to protect Japan if that country is attacked, and 34% knew this about South Korea (Council on Foreign Relations 2016). This data clearly demonstrates that there are significant gaps in what young people understand about deterring and defending against the full range of threats, and what they need to know to best contribute to the continued success and overall national security capability

of the United States. In this article, we first present numerous civilian and military leadership appeals to renew attention and integrate deterrence concepts into coursework on diplomatic, military, technological, and economic powers, to demonstrate that currently there is an extensive and concerted effort to teach these concepts and improve our knowledge of deterrence, particularly within military academic institutions at an unprecedented level. As military educational institutions take concrete actions toward teaching awareness and adaptation of deterrence theory and operations based on the critical needs outlined by our national leaders, we ask: How can we improve our instruction at civilian universities to allow our students to actively participate in rethinking and reframing deterrence concepts? We examine this question by drawing on examples and discussing our attempts at the University of Nebraska at Omaha Political Science Department over the last four years to nurture the next generation of America's strategic thinkers and leaders without deliberately leaving teaching "defense" concepts to the military. As the founding members of United States Strategic Command's (USSTRATCOM) Deterrence and Assurance Academic Alliance of roughly 40 military and civilian academic institutions seeking to bridge the military-academia gap, we present some of our efforts to integrate new and old security studies, traditional and critical theories, regional and ethnographic studies—all previously alien to deterrence studies—and promote the development of deterrence expertise. This article proposes an agenda that recommends updating reading lists to reflect 21st-century deterrence literature, and elaborates on teaching techniques and strategies to include deterrence in interactive in-class learning activities such as problem-based learning and simulations. Moreover, we suggest strengthening students' critical thinking and national security writing skills through collaborative research projects with the government and defense institutions, and encouraging experiential learning opportunities for undergraduate students.

Why we should teach deterrence: The military-academia gap

The contentious debates regarding what and how to teach in political science, and whether any of it is relevant, useful, or accessible to policymakers, are as old as our field. Despite curricula change recommendations dating from the 1920s, political science departments are still largely not investing in career preparation, experiential learning, and activities in the "real world" (Collins, Knotts and Schiff 2012). This debate is particularly persistent within the foreign policy subfield, concerning "bridging the Beltway-Ivory Tower gap" between policymakers and academia, and the usefulness of what we write and teach to those in the real world (Jentleson and Ratner 2011). While some call for closer ties (George 1993; Jentleson 2002; Putnam 2003), others cautiously highlight the dangers and argue for the preservation of the "intellectual integrity" of the field (Hill and Beshoff 1994). The chasm particularly deepens on the subject of our profession's interaction and intellectual engagement with military institutions and defense practitioners. In fact, there is virtually no political science literature directly and critically addressing the military-academia gap, with the exception of a single op-ed suggesting that most political scientists have never had any interaction with the people whose defense policy decisions we seek to understand, and often lack a basic understanding of

military structures and how they fit into our foreign and security policy theories (Thornhill and Whitlark 2015). Besides the fact that such sweeping statements overestimate our field's desire to be policy relevant and ignore the academic mission of scientific inquiry and teaching, they also reflect the lack of informed dialogue on the military-academia gap.

We do not deny that university course offerings and research in a post-9/11 America have become more militarized, and justified on the grounds of national security (Giroux 2008; Rohde 2013). We also recognize that the role of our profession is not solely to produce students and teach concepts in accordance with the expressed needs of the United States government, and are by no means suggesting favoring teaching military over diplomatic solutions to everyday national security problems. But what we seek to assert is that teaching strategic stability concepts and deterrence policy to our undergraduate students supports the fundamental pillar of American democracy—the civilian control of the military.

In this article, we hope to highlight the argument that "political scientists have a responsibility to prepare students to make sound judgments about what elected authorities decide about and do with our military" (Stiehm 2007, 453), perhaps today more than during any other administration. If our curriculum is not updated to critically address the issues of 21st-century deterrence that current leaders grapple with on a daily basis, we risk leaving our students disadvantaged and incapable of making those judgments. We propose that young Americans graduating with political science degrees from civilian academic institutions should be able to fathom military strategy concepts and engage in making decisions that will prevent hostile actions against the United States and its allies. Not for the sake of war, but for the sake of peace.

Military education and deterrence: Concerns and reforms

The United State deterrence enterprise is in the process of playing catch-up, in terms of updating its capabilities, policies, and education. Deterrence is commonly assumed to be an implied task within any military strategy, but few in the military have the time to learn or apply this method to their plans or operations. In fact, many of our current national security leaders have not been adequately trained and may be unprepared to conduct credible deterrence operations, particularly in complex regional nuclear conflicts (Bernstein 2015). Moreover, past events, such as the incorrect loading of nuclear weapons in 2006 and 2007, cheating on proficiency exams in 2014, drug use by operators in 2016, and continued manpower reductions, have forced government leaders to launch multiple review efforts in hopes of addressing and reforming this critical national security area (Burns 2013).

The National Defense Authorization Act for Fiscal Year 2014 identified the lack of education in deterrence as the main finding of the review (H.R. Rep. No. 113-102, 2014) and, as a result, presented recommendations for then-Secretary of Defense Hagel to reinvigorate professional military education by focusing on development of a cadre with a deep understanding of nuclear deterrence policy, strategic stability, and escalation control. Secretary Hagel, along with other senior Department of Defense leaders, sought to implement many of these changes, advocating that appropriate steps be taken to

refocus military member education in this area. Shortly after that, the National Research Council released a report highlighting some of the critical deficiencies in deterrence education and analytic capabilities within the U.S. Air Force, including lack of content analysis, leadership profiling, abstract modeling, gaming and simulations as methods (2014). To address these shortcomings, the U.S. Air Force created the School of Advanced Nuclear Deterrence Studies (SANDS) and graduated its first class focused on nuclear deterrence in September 2016. Other military educational institutions, such as Air University and the Naval War College, have also started offering undergraduate courses and academic programs to help students understand nuclear, cyber, and space strategic deterrence and assurance in a 21st-century security environment and to identify best methods and tools for studying them.

In addition to these efforts, General Paul Selva, Acting Chairman of the Joint Chiefs of Staff, provided a Memorandum for the Chiefs of the Military Services and President of National Defense University expressing the need for the Joint Professional Military Education (JPME) curricula to include "Strategic Deterrence in the 21st Century/ Deterrence and Escalation Dynamics" in order to teach the next generation of military leaders cross-domain and cross-regional deterrence and escalation control with multiple methods. The memo acknowledges that current military education treats nuclear deterrence as a "Cold War relic," and there is a "critical need" to increase learning in this area. More specifically, it recommends advancing awareness and critical thinking about the requirements of strategic deterrence by expanding the academic curriculum.

All of these initiatives demonstrate that the defense community has become very vocal about the relevance and need for conceptual evolution of deterrence theory and examination of frameworks for assessing strategic stability in other domains, such as cyber and space.

Rethinking and reviving deterrence in political science classrooms

In an attempt to get more experiential learning opportunities for our students, we have sought to get out of our own academic silo to broaden the discussion and challenge our thinking and methodologies to address new security threats and war domains. As a result of our conversations, for much of his time at the helm of USSTRATCOM, former Commander Admiral Haney actively engaged with the authors of this article on creating the Deterrence and Assurance Academic Alliance with the specific goal of developing and sustaining a formal program that will stimulate new thinking, teaching, and career preparation for students to solve real-world problems. Today over 40 military and civilian academic institutions are members of this alliance and present a concerted effort to bridge the military-academia gap by integrating new and old security studies, traditional and critical theories, regional and ethnographic studies—many previously alien to deterrence studies. In the past four years, as its founding members, we visited some of the leading universities and colleges across America, and co-organized military-academic workshops and conferences. We found what the Council on Foreign Relations's (CFR) surveys suggested—most students lack the basic knowledge of deterrence, the concept that defined American foreign policy for much of the last century. Moreover, the way deterrence was taught at most of these institutions seemed largely mired in Cold War

narratives. Patrick McKenna, Chief of Plans, Evaluation and Research at USSTRATCOM, as well as its highest-ranking civilian employee, sums up our findings:

> When the Cold War ended, academia and professional military education *rightly* reduced its emphasis on deterrence and assurance concept exploration. Today we face the return of great power competition, and while the core logic of deterrence remains valid, what is needed is a renewed examination of deterrence and assurance concepts for a multipolar world where the activities to be deterred may occur in multiple domains.

What we review below are specific instructional materials and activities adopted within our own department's international relations courses in order to engage undergraduate students in critical intellectual debates on deterrence that go beyond its nuclear 20th-century roots. We hope the following resources will meet the needs of individual faculty members and fit the constraints of their teaching and learning environments.

Teaching deterrence and assurance concepts in the 21st century

Although it is of critical importance to ground our class discussion in a traditional conceptual foundation built by the "greats" of deterrence literature, such as Bernard Brodie, Herman Kahn, Thomas Schelling, and Jack Snyder, we recommend updating our readings list. Despite their tremendous intellectual efforts and the significance of their theoretical contributions, we suggest teaching the next generation by integrating more readings in international relations courses that question the application and validity of their Cold War deterrence arguments. That way we reduce the risk of leaving students thinking that deterrence is an old, single-adversary problem that can be limited to the military and the nuclear domain, as it was during the Cold War.

First, if the learning objective is to identify key concepts in and articulate major arguments in contemporary security studies, teaching classical deterrence in the nuclear domain continues to be necessary. However, today it is imperative that students read some of the newest arguments that the United States cannot afford to reduce its nuclear arsenal if it is to maintain the ability to respond to threats such as North Korea, China, or Russia (e.g., Bracken 2012; Payne 2015; Roberts 2015). Its proponents are among the authors of the Trump administration's 2018 *Nuclear Posture Review* (NPR), calling for new, low-yield sea-launched ballistic missiles, and use of nuclear weapons in non-nuclear strategic attacks potentially against civilians and infrastructure. The idea of a limited nuclear war, it seems, has become more popular within certain policymaking and academic circles that are close to the White House and Department of Defense (Kroenig 2014; Colby 2018), and it could not only redirect our country's approach to the subject but potentially shape future partisan debates and deterrence as a concept in years to come (Hersman 2018). For a more comparative approach, we also suggest examining these issues beyond U.S. borders by including cross-national studies of nuclear doctrines and force structures of China, Pakistan, and Russia (e.g., Fravel and Medeiros 2010; Narang 2010; Zysk 2017).

Second, our teaching of deterrence in the 21st century should enhance students' ability to critically examine the applicability of old nuclear arguments in new and non-kinetic war domains. For example, students can examine the limitations of the conventional frameworks for deterrence by gaining the appreciation of the ambiguities of

attribution, diversity of actors involved, as well as challenges and complexities of cost/benefits structures in the cyberspace (Nye 2011; Cooper 2012; Libicki 2016; Nye 2017). Moreover, this would provide the opportunity to explore a more expansive view of cross-domain deterrence concepts that include questions about the security of critical nuclear communications networks known as NC3—nuclear command, control, and communications (Cimbala 2014; Gartzke and Lindsay 2017). Such readings would allow for considerable scrutiny of vulnerabilities of our nuclear capabilities and threats to crisis management and escalation control posed by cyberattacks. Similarly, discussing strategic competition and weaponization in space (Bormann and Sheehan 2009; Coletta 2009; Johnson-Freese 2016) would allow students to closely examine the applicability of traditional tit-for-tat strategy and focus on the potential for an arms race with China and Russia (López 2012).

Third, if familiarizing students with the key problems of contemporary international terrorism, we suggest including a discussion of non-state actors and the proliferation of WMDs. One way to achieve that objective is to include *fourth wave* deterrence literature that moves the deterrence debate beyond the Cold War to include asymmetric threats and nonmilitary responses and means (e.g., Knopf 2010; Lupovici 2010). While deterrence theory grew from a bipolar Cold War setting in which two equal counterparts balanced each other, students should evaluate deterrence in asymmetric situations where the sides are not equal and involve dynamic non-state actors (e.g. Allison 2004; Bowen 2004; Lieber and Press 2013). In addition, students can gain a better understanding of the complexities of asymmetric deterrence by tracing the evolution of terrorism in cyberspace over the course of the past couple of decades (Weimann 2015).

And last, having students compare and contrast strategic cultures of the states the United States seeks to influence would allow students to analyze how each potential adversary may view our actions. By gaining insight into the intellectual history of the cross-domain concept in Russia (Adamsky 2018) or the influences of historical memory and cultural values in North Korea (Friend 2018), students will be able to identify the need to adjust and tailor deterrence to each potential adversary (Bunn 2007; Lantis 2009).

In sum, including some of the readings listed in this section would allow for a more nuanced and comprehensive examination of strategic thinking, as well as critical analysis and adaptation of traditional theories to the new post–Cold War security realities. Although we have sought to include content by authors of diverse gender and racial identities, the field of nuclear deterrence seems largely an area of study occupied by a very specific demographic, often marginalizing critical and emancipatory works. As a consequence, no classroom debate on deterrence is complete without additional readings on inherent masculinity and rationality (Cohn 1987; Cohn 2018; Duncanson and Eschle 2008) as well as "Whiteness" of the bomb (Jones 2010; Intondi 2015) embedded in the conceptualization of the politics of nuclear weapons.

Teaching with policy documents

Our students live in a world where government officials, political parties, traditional media, and alternative news sources present their competing and often clashing views on deterring threats and assuring allies on multiple new digital platforms in the form of

tweets, memes, gifs, and sound bites, without much data transparency. By integrating doctrinal and policy documents as companions to standard international relations or foreign policy readings in courses such as Global Security, Intelligence and National Security, and U.S. Foreign Policy, we attempted to add a fresh perspective and deepen students' understanding of (1) how threats continue to evolve and change at an increasingly rapid pace, (2) how they are identified, and (3) what strategies different government departments and agencies propose to counter them. Using these documents has not only been useful in teaching our students the importance of data transparency but also allowed them "to appreciate the richness and nuance of what sources actually say, assess precisely how they relate to broader claims, and evaluate whether they have been interpreted or analyzed correctly" (Moravcsik 2014, 48).

Guided by a previously developed set of questions (see the Appendix), students engaged in textual and contextual analysis of documents such as the National Security Strategy, the Nuclear Posture Review, the National Security Space Strategy, U.S. Intelligence Community's World Wide Threat Assessment, as well as strategic and defense documents of other states. We have taken advantage of the flexible nature of these questions and used them to require students to demonstrate their understanding of a particular document in writing, as well as to prepare them for an in-class simulation exercise.

For example, by assigning both 2010 and 2018 Nuclear Posture Reviews, we have asked students to examine the intent and aspirations of the stakeholders involved in writing these strategic documents, identify the elements of continuity and change, as well as domestic policy mechanisms and processes relevant to deterrence implementation by appropriate agencies. To reach the learning objective without overwhelming students as well as faculty presenting the content, we used an up-to-date list of supplementary readings examining the current conceptual debates available on the Federation of American Scientists resource webpage (2018 NPR, Federation of American Scientists).

Teaching with problem-based learning

Developed in the 1970s by the McMaster University medical school, Problem-Based Learning is a pedagogical approach where students are presented with real-world situations and are asked to work in groups to solve problems similar to those they might encounter in their future careers. Although this approach has been used in a variety of international relations courses (Burch 2000), we have specifically used it as part of our department's year-long project under the auspices of the "Intelligence Community Scholars" experiential learning program. This program is available to all students with a junior standing who are and interested in pursuing national security and intelligence research and careers. It can be taken for credit, and in the past four years, over 60 students have participated.

At the beginning of our fall semester, we divide roughly 15 student participants into 3–4 teams and assign a different current strategic policy problem to each. While we use the Deterrence and Assurance Academic Alliance's annual list of current strategic policy problems as our starting point, we have adapted and adjusted them according to our

students' level of comfort and overall familiarity with the subject matter (United State Strategic Command, 2018). Once we present a real-world deterrence problem to each team, we guide students with Socratic questioning to examine it, determine what information they already have and what information they need to learn, evaluate different options, develop solutions. and finally present their findings. The learning objectives are to perform analysis, identify limitations of data or theoretical assumptions, and recommend policy solutions, as well as strengthen their writing and communication skills. During our spring semester, students present final research products at the University's Undergraduate Research Day, and more importantly at the alliance's annual two-day conference and workshop for faculty and students in March. Participation in such a program has been an invaluable alternative to traditional deterrence teaching practices, as students learn to also write for a broader audience and to communicate and respond to feedback from military leaders and civilian practitioners whose daily responsibilities include nuclear command and control; space operations; global strike; global missile defense; and global command, control, communications, computers, intelligence, surveillance, and reconnaissance.

This particular conference, as well as USSTRACOM's Annual Symposium, has served as an excellent professional development resource for us and other faculty members and an opportunity to have a broader discussion on the instructional concepts and teaching processes with our colleagues in political science. Furthermore, USSTRATCOM's military and civilian analysts not only provide guidance to faculty on how to use these problem-sets in their classrooms but have directly engaged with students, highlighting the centrality of active, collaborative, and interdisciplinary problem-based learning and innovative solutions to deterrence in the 21st century.

Teaching with simulations

The use of active-learning instructional techniques such as role-playing and in-class simulations that mirror real-world situations allows students to gain a deeper understanding of deterrence, the importance of competition and cooperation, and constraints and motivations involved in decision-making and complex problem-solving. Over the past five decades, pedagogical literature has identified a variety of benefits to student learning and faculty professional development (Greenblat 1973; Pierfy 1977; Smith and Boyer 1996), and has sought to refine simulation learning objectives and assessment (Greenblat and Duke 1981; Ruben and Lederman 1982; Kille 2002). Esberg and Sagan argue that such simulations will keep students informed on current issues, assist in their understanding of decisions and how they are influenced by a range of factors beyond military capabilities and international alliances, and develop "the necessary empathy and imagination to understand how and why political leaders in their own countries, and especially leaders in other countries, act as they do in international politics" (2012, 95).

Although the simulation preparation and in-class activity can be deemed labor intensive and detrimental to a more comprehensive study of international security for the sake of a narrow topic specialization (Smith and Boyer, 1996), the "low-intensity simulations" or mini simulation could allow students to experience the process of national security policymaking and practice strategic thinking (Glazier 2011). These types of

simulations are generally implemented once during the course, as they do take time and preparation to execute efficiently and effectively, often requiring roughly 4–6 hours: four hours of student preparation and two hours of classroom activity.

We conduct simulations in the following courses: Intelligence and National Security, International Leadership and Strategy, and International Law. In all classes, we seek to (1) identify a realistic deterrence scenario; (2) identify pre-reading material that will connect interests, capabilities, and limitations of the parties involved; (3) assign roles to individual teams; and (4) facilitate discussions on communicating credible deterrence, calculating responses, and examining the role of nuclear weapons and the effectiveness of deterrence in today's cross-domain security environment.

In order to enhance our efforts, we coordinate annually with the following organizations that offer student participation in simulations focused on either deterrence objectives, international relations problem-sets, or defense/intelligence issues: National Strategic Research Institute (NSRI), United State Air Force Academy, United State Army Academy at West Point, and USSTRATCOM. In our experience, simulations that are either facilitated by or done in collaboration with government officials were particularly engaging for our students as they gained the opportunity to brainstorm with practitioners, allowing them to understand the realities of a situation and assist them in developing complex courses of action for potential crises.

In an effort to save time, faculty can integrate simulations by adopting tested simulation frameworks and apply them to deterrence problems (Asal and Blake 2006; Glazier 2011; Esberg and Sagan 2012; Shelton 2014), or use already created online deterrence simulations. The Council on Foreign Relation's Model Diplomacy (2019) provides detailed simulations that allows instructors to create accounts for their students, assign roles, and collaborate virtually. Similarly, the State Department Center for Education Program offers simulations on nuclear crisis and exposes students to concepts such as alliances, assurance, and dealing with people of varied backgrounds to advance a country's deterrence efforts.

Conclusion

There is a wide consensus that questions of nuclear strategy, deterrence, and assurance are not only back, but rather far more complex compared to the Cold War strategic environment given new non-conventional domains and asymmetric threats. This article has sought to demonstrate that there is a gap between what we teach in our discipline and what our students need to know about the world and security today. We are not arguing that our research agendas should be dictated by policy wonks but for the sake of providing our students with real-world skills, the political science discipline ought to rethink the way it integrates deterrence into security studies and how it engages with those who implement it. As a profession, we have an obligation not to view security education as strictly a military responsibility. The bifurcation of the security field into military-relevant and academic scholarship is limiting the educational mission of our profession, research opportunities for our faculty and students, and ultimately will limit students seeking both government and private-sector careers in national security.

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References

Adamsky, D. 2018. "From Moscow with Coercion: Russian Deterrence Theory and Strategic Culture." *Journal of Strategic Studies* 41 (1-2):33–60. doi: 10.1080/01402390.2017.1347872.

Allison, Graham. 2004. *Nuclear Terrorism: The Ultimate Preventable Catastrophe*. Basingstoke, UK: Macmillan.

Asal, Victor, and Elizabeth L. Blake. 2006. "Creating Simulations for Political Science Education." *Journal of Political Science Education* 2 (1):1–18. doi: 10.1080/15512160500484119.

Bernstein, Paul I. 2015. "Deterrence in Professional Military Education." *Air and Space Power* 29 (4):1–98.

Bormann, Natalie, and Michael Sheehan, eds. 2009. *Securing Outer Space: International Relations Theory and the Politics of Space*. Abingdon, UK: Routledge.

Bowen, Wynn. 2004. "Deterrence and Asymmetry: Non-state Actors and Mass Casualty Terrorism." *Contemporary Security Policy* 25 (1):54–70. doi: 10.1080/1352326042000290506.

Bracken, Paul. 2012. *The Second Nuclear Age: Strategy, Danger, and the New Power Politics*. Basingstoke, UK: Macmillan.

Bunn, M. Elaine. 2007. "Can Deterrence Be Tailored?" *Strategic Forum* 225:1–8.

Burch, Kurt. 2000. "A Primer on Problem-Based Learning for International Relations Courses." *International Studies Perspectives* 1 (1):31–44. doi: 10.1111/1528-3577.00003.

Burns, Robert. 2013. "Nuclear Unit in Montana Fails Inspection; Air Force General says it 'Fumbled' a Key Exercise," *Associated Press* (13 August 2013). https://www.foxnews.com/us/nuclear-unit-in-montana-fails-inspection-air-force-general-says-it-fumbled-a-key-exercise

Cimbala, S. J. 2014. "Nuclear Deterrence and Cyber: The Quest for Concept." *Air and Space Power Journal* 28 (2):87–107.

Cohn, Carol. 2018. "The Perils of Mixing Masculinity and Missiles." New York Times 5 January. https://www.nytimes.com/2018/01/05/opinion/security-masculinity-nuclear-weapons.html

Cohn, Carol. 1987. "Sex and Death in the Rational World of Defense Intellectuals." *Signs* 12 (4): 687–718. doi: 10.1086/494362.

Colby, Eldridge. 2018. "If You Want Peace, Prepare for Nuclear War." *Foreign Affairs* 97 (6):25.

Coletta, Damon. 2009. "Space and Deterrence." *Astropolitics* 7 (3):171–192. doi: 10.1080/14777620903372982.

Cooper, J. (2012). "A New Framework for Cyber Deterrence." In *Cyberspace and National Security: Threats, Opportunities, and Power in a Virtual World*, eds. D. Reveron. Washington, DC: Georgetown University Press, 105–120.

Council on Foreign Relations. 2016. "What Students Know About the World: A Survey on Global Literacy," September 2016. http://i.cfr.org/content/newsletter/files/CFR_NatGeo_ASurveyonGlobalLiteracy.pdf

Council on Foreign Relation's Model Diplomacy, 2019. Free Online Simulation Materials https://modeldiplomacy.cfr.org/#/.

Collins, Todd, Gibbs Knotts, and Jen Schiff. 2012. "Career Preparation and the Political Science Major: Evidence from Departments." *PS: Political Science & Politics* 45 (1):87–92. doi: 10.1017/S1049096511001764.

Duncanson, C., and Eschle, C. 2008. "Gender and the Nuclear Weapons State: A Feminist Critique of the UK Government's White Paper on Trident. *New Political Science* 30 (4):545–563. doi: 10.1080/07393140802518120.

Esberg, Jane, and Scott Sagan. 2012. "Negotiating Nonproliferation: Scholarship, Pedagogy, and Nuclear Weapons Policy." *The Nonproliferation Review* 19 (1):95–108. doi: 10.1080/10736700.2012.655089.

Friend, John. 2018. "A Cultural Neuroscience Perspective on North Korean Strategic Culture: Implications for Tailored Deterrence." *Politics and the Life Sciences* 37 (2):1–24. doi: 10.1017/pls.2018.13.

Fravel, M. Taylor, and Evan S. Medeiros. 2010. "China's Search for Assured Retaliation: The Evolution of Chinese Nuclear Strategy and Force Structure." *International Security* 35 (2):48–87. doi: 10.1162/ISEC_a_00016.

Gartzke, Erik, and Jon R. Lindsay. 2017. "Thermonuclear Cyberwar" *Journal of Cybersecurity* 3 (1):37–48. doi: 10.1093/cybsec/tyw017

George, Alexander L. 1993. *Bridging the Gap: Theory and Practice in Foreign Policy*. Washington D.C.: United States Institute of Peace.

Giroux, Henry A. 2015. *University in Chains: Confronting the Military-Industrial-Academic Complex*. Abingdon, UK: Routledge.

Giroux, Henry A. 2008. "The Militarization of US Higher Education After 9/11." *Theory, Culture & Society* 25 (5):56–82. doi: 10.1177/0263276408095216.

Glazier, Rebecca A. 2011. "Running Simulations without Ruining Your Life: Simple Ways to Incorporate Active Learning into Your Teaching." *Journal of Political Science Education* 7 (4):375–393. doi: 10.1080/15512169.2011.615188.

Greenblat, Cathy Stein. 1973. "Teaching with Simulation Games: A Review of Claims and Evidence." *Teaching Sociology* 1 (1):62–83. doi: 10.2307/1317334.

Greenblat, Cathy Stein, and Richard L. Duke. 1981. *Principles and Practices of Gaming-Simulation*. Beverly Hills: Sage.

Hersman, Rebecca. 2018. "Continuity Is Not Consensus: The Future Nuclear Posture Review" Commentary, CSIS, October 19, Available at: https://www.csis.org/analysis/continuity-not-consensus-future-nuclear-posture-review

Hill, Christopher, and Pamela Beshoff. eds. 1994. *Two Worlds of International Relations: Academics, Practitioners and the Trade in Ideas*. London, UK: Routledge.

Intondi, Vincent. 2015. *African Americans against the Bomb: Nuclear Weapons, Colonialism, and the Black Freedom Movement*. Palo Alto, California: Stanford University Press.

Jentleson, B.W. 2002. "The Need for Praxis: Bringing Policy Relevance Back In." International Security, 26 (4):169–183. doi: 10.1162/016228802753696816.

Jentleson, Bruce W., and Ely Ratner. 2011. "Bridging the Beltway–Ivory Tower Gap." *International Studies Review* 13 (1):6–11. doi: 10.1111/j.1468-2486.2010.00992.x.

Johnson-Freese, Joan. 2016. *Space Warfare in the 21st Century: Arming the Heavens*. Abingdon, UK: Taylor & Francis.

Jones, Matthew. 2010. *After Hiroshima: the United States, Race and Nuclear Weapons in Asia, 1945–1965*. Cambridge, UK: Cambridge University Press.

Kille, Kent J. 2002. "Simulating the Creation of a New International Human Rights Treaty: Active Learning in the International Studies Classroom." *International Studies Perspectives* 3 (3):271–290. doi: 10.1111/1528-3577.00096.

Knopf, Jeffrey W. 2010. "The Fourth Wave in Deterrence Research." *Contemporary Security Policy* 31 (1):1–33. doi: 10.1080/13523261003640819.

Kroenig, M. 2012. "Time to Attack Iran: Why a Strike is the Least Bad Option." *Foreign Affairs* 91 (1):76–86.

Lantis, Jeffrey S. 2009. "Strategic Culture and Tailored Deterrence: Bridging the Gap between Theory and Practice." *Contemporary Security Policy* 30 (3):467–485. doi: 10.1080/13523260903326677.

Libicki, Martin. 2016. *Cyberspace in Peace and War*. Annapolis, MD: Naval Institute Press.

Lieber, Keir A., and Daryl G. Press. 2013. "Why States Won't Give Nuclear Weapons to Terrorists." *International Security* 38 (1):80–104. doi: 10.1162/ISEC_a_00127.

López, Laura Delgado. 2012. "Predicting an Arms Race in Space: Problematic Assumptions for Space Arms Control." *Astropolitics* 10 (1):49–67 doi: 10.1080/14777622.2012.647391.

Lupovici, Amir. 2010. "The Emerging Fourth Wave of Deterrence Theory—Toward a New Research Agenda." *International Studies Quarterly* 54 (3):705–732. doi: 10.1111/j.1468-2478.2010.00606.x.

Narang, Vipin. 2010. "Posturing for peace? Pakistan's nuclear postures and South Asian stability." *International Security* 34 (3):38–78. doi: 10.1162/isec.2010.34.3.38.

Nye, Joseph. Jr. 2011. "Nuclear Lessons for Cyber Security?" *Strategic Studies Quarterly* 5 (4):18–38.

Nye, Joseph S. Jr. 2017. "Deterrence and Dissuasion in Cyberspace." *International Security* 41 (3):44–71. doi: 10.1162/ISEC_a_00266.

Moravcsik, Andrew. 2014. "Transparency: The Revolution in Qualitative Research." *PS: Political Science & Politics* 47 (1):48–53. doi: 10.1017/S1049096513001789.

Payne, Keith B. 2015. *Deterrence in the Second Nuclear Age*. Lexington, KY: University Press of Kentucky.

Pierfy, David. 1977. "Comparative Simulation Game Research: Stumbling Blocks and Stepping Stones." *Simulation & Games* 8 (2):255–268. doi: 10.1177/003755007782006.

Putnam, Robert. 2003. "APSA Presidential Address: The Public Role of Political Science." *Perspectives on Politics* 1:249–255. doi: 10.1017/S1537592703000185.

Rohde, Joy. 2013. *Armed with Expertise: The Militarization of American Social Research During the Cold War*. Ithaca, NY: Cornell University Press.

Ruben, Brent.D., and Linda Costigan Lederman. 1982. "Instructional Simulation Gaming: Validity, Reliability, and Utility." *Simulation & Games* 13 (2):233–244. doi: 10.1177/003755008201300207.

Roberts, Brad. 2015. *The Case for US Nuclear Weapons in the 21st Century*. Palo Alto, California: Stanford University Press.

Selva, Paul J., General. 2016. Memorandum for Chiefs of the Military Services. "Academic Year 2017-2018 Joint Professional Military Education Special Areas of Emphasis." Chairman of the Joint Chiefs of Staff, Washington, D.C.

Shelton, Allison M. 2014. "Teaching Analysis: Simulation Strategies in the Intelligence Studies Classroom." *Intelligence and National Security* 29 (2):262–281. doi: 10.1080/02684527.2013.834219.

Smith, Elizabeth T., and Mark A. Boyer. 1996. "Designing In-Class Simulations." *PS: Political Science & Politics* 29 (4):690–694. doi: 10.2307/420794.

Stiehm, Judith Hicks. 2007. "Things Students and Political Scientists Might Consider about Our Military." *PS: Political Science and Politics* 40 (3):453–456. doi: 10.1017/S1049096507210923.

Thornhill, Paula, and Rachel Whitlark. 2015. "Political Scientists and the Military." War on the Rocks, August 10. https://warontherocks.com/2015/08/political-scientists-and-the-military/ (May 15, 2018).

United States Diplomacy Center, 2018. Educator Materials, Free Downloadable Simulation Materials https://diplomacy.state.gov/education-program-mission-vision.

U.S. Congress. House of Representatives. Committee on Armed Services. 2014. National Defense Authorization Act for Fiscal Year. Parts for H. Rept. 113-102.

United State Strategic Command, 2018. "Deterrence and Assurance Academic Alliance Research Topics," http://www.stratcom.mil/Academic-Alliance/Research-Topics/ (October 27, 2018).

Weimann, Gabriel. 2015. *Terrorism in Cyberspace: The Next Generation*. New York City, NY: Columbia University Press, 2015.

Council on Foreign Relations. 2016. "What Students Know About the World: A Survey on Global Literacy," September 2016. http://i.cfr.org/content/newsletter/files/CFR_NatGeo_ASurveyonGlobalLiteracy.pdf (March 10, 2018).

Zysk, Katarzyna. 2017. "Nonstrategic Nuclear Weapons in Russia's Evolving Military Doctrine." *Bulletin of the Atomic Scientists* 73 (5):322–327. doi: 10.1080/00963402.2017.1362908.

Appendix

Policy/Doctrinal Document Analysis Questions

1. What is the objective of the document?
2. Who (government branch, department, agency) is tasked with its implementation? How is it funded?
3. Under what specific domestic political and economic circumstances was this document created?
4. What larger international events, processes, or structures might have influenced the text?
5. What specific steps are outlined to strengthen state's deterrence and competitiveness?
6. What further adaptation of the deterrence posture might be necessary and appropriate 10–20 years from now?
7. What biases (loss aversion, mirror-imaging, cognitive, affective) might have shaped the message of this policy document?
8. What are the potential impacts of this document on other sectors and high-priority issues (e.g., social programs, economic impact, sustainability efforts, other security concerns)?
9. What cultural/gender/race norms and perspectives inform this document or are left out of this document?
10. (If and when using older policy documents) Is this policy document consistent with what you know about the historical record from that time or with what you have read in class? Do the ideas and values in the document differ from the ideas and values of our time?
11. Does this policy document conflict with any other policy or guidance documents released by this administration?
12. What questions are left unanswered by this document?