

Stanton Nuclear Security Fellows Seminar

PANEL 1: Nuclear Decision-Making

1. James Cameron, CISAC

The Johnson Administration, Strategic Arms Control and U.S.-Soviet Détente, 1966-1969

Objectives:

In addition to revising my PhD for publication, I want to move beyond it by writing an article on Lyndon Johnson's attempts to come to terms with the Soviets on the limitation of strategic arms between 1966 and 1969. The article will present a post-revisionist analysis of Johnson's approach to détente that reconciles it with his broader foreign policy, in particular Vietnam. The eventual objective of this line of research is to produce a book that re-examines American approaches to détente through nuclear arms control with the Soviet Union between 1958 and 1991.

Overview:

For decades after he left office, assessments of Lyndon Johnson's foreign policy were dominated by his mishandling of the Vietnam War.¹ However, starting in the early 1990s and accelerating in the 2000s, revisionist literature on Johnson has sought to highlight the progress he made in other areas, most notably détente with the Soviet Union and strategic arms control.² Thus, at the present time the literature presents a bipolar Johnson: at once attempting to uphold American credibility in a relatively peripheral area of the world, while at the same time negotiating to mitigate the costs of an arms race that most saw as fundamental to the American commitment to the security of Western Europe.

This article will move the literature forward by showing how the Johnson administration's vision for strategic arms control was predicated on the same optimism regarding American capacity to prevail that drove American involvement in Vietnam. Unlike the Nixon White House, the Johnson administration pushed for a strategic arms freeze that would leave the U.S. with a commanding lead in nuclear weapons. In its belief that the Soviet Union could ultimately be bested in an arms race in the event that

¹ Such assessments remained common currency well into the 1990s. See: David Kaiser, "Men and Policies: 1961-1969," in Diane B. Kunz (ed.), *The Diplomacy of the Crucial Decade: American Foreign Relations During the 1960s* (New York, 1994), 11-41; Frank Costigliola, "LBJ, Germany and 'the end of the Cold War,'" in Warren I. Cohen & Nancy Bernkopf Tucker (eds.), *Lyndon Johnson Confronts the World: American Foreign Policy, 1963-1968* (Cambridge, 1994), 173-210; Irving Bernstein, *Guns or Butter: The Presidency of Lyndon Johnson* (New York, 1996), 525-42.

² An early version of this view is: Glenn T. Seaborg & Benjamin S. Loeb, *Stemming the Tide: Arms Control in the Johnson Years* (Lexington, MA, 1987). Prominent historical works now include: H.W. Brands, *The Wages of Globalism: Lyndon Johnson and the Limits of American Power* (New York, 1995); H.W. Brands (ed.), *The Foreign Policies of Lyndon Johnson: Beyond Vietnam* (College Station, 1999); Thomas A. Schwartz, *Lyndon Johnson and Europe: In the Shadow of Vietnam* (Cambridge, MA, 2003); Hal Brands, "Progress Unseen: U.S. Arms Control Policy and the Origins of Détente," *Diplomatic History* 30 (April 2006), 253-85.

negotiations failed, and its overestimation of the pressure on the Soviets to shift resources into consumer goods, the Johnson administration's approach to détente through arms control displayed the same faith in American-style economic modernization that made it initially so confident of being able to prevail in Vietnam.

As the work progresses, I will broaden the scope of my research to lay the groundwork for my second book, which will be on the development of U.S.-Soviet détente through nuclear arms control measures. In doing so, it will explore the distinct yet related conceptions of détente held by administrations from Eisenhower to George H.W. Bush, placing them in their domestic political and economic context and linking them to their broader foreign-policy agenda.

Research design:

The project will mainly be based on primary sources, the backbone of which will be initially from the Johnson and Nixon presidential libraries, but will widen to include those of administrations from Eisenhower to Bush.

Research product:

The research product will comprise firstly of a post-revisionist analysis, in article form, of Lyndon Johnson's efforts to engage the Soviets in arms control talks. I will also secure a book contract for the Ph.D. and rewrite the manuscript for publication. In addition, I would like to make progress towards the second book, the first stage of which will be the collection of a large amount of archival material that I can take back to Britain with me for further analysis and dissection.

Contribution and target audience:

The history's contribution to policymaking is harder to pin down than that of political science. Often historians take pleasure in muddying the waters rather than clarifying them. This can be deeply frustrating to policymakers who would much rather have a handy historical analogy up their sleeve to make the case for their chosen course of action.

However, history does make a contribution to policy by reinterpreting the past in ways that highlight new connections. By showing how Johnson's vision of détente through arms control was motivated by far more than a simple impulse to halt the arms race and was congruent with seemingly contradictory elements of his foreign policy, I hope this article will broaden both students' and practitioners' ideas regarding the diverse influences on U.S. arms control policy.

Ideally, the article or the eventual book will find its way onto the reading lists for grand strategy-type courses that are proliferating across the United States. Such programs do not really exist in Britain for a number of reasons that I will be happy to discuss. However, I do believe there is scope for such an approach in my own country and I hope to bring it home with me. In doing so, I want to contribute not only to the education of future policymakers, but also a more informed public that is able to challenge the stories politicians tell about the past.

2. Edward Geist, RAND

Planning for the Worst: Reforming Civilian Nuclear Regulation in Light of Historical Experience to Meet the Needs of Emergency Management

Description:

The aftermath of the meltdowns at Japan's Fukushima-Daiichi nuclear power plant illustrated the tremendous political, economic, and social impacts of accidents at nuclear energy facilities. This research project has three primary goals: first, to evaluate the United States' current regulatory framework for managing a similar civilian nuclear crisis in light of international experience; second, to analyze the potential effects of the Nuclear Regulatory Commission's proposed shift from prescriptive to performance-based regulation on the ability of the United States to address these events; and finally, to investigate the possibility of utilizing recent innovations in analytics and causal inference to alleviate the regulatory, operational, and emergency management challenges posed by the possibility of serious reactor accidents.

Policy Background:

The 2011 accident at Fukushima-Daiichi demonstrated both that major accidents could occur at nuclear power plants built to American designs and the dangers of inadequate nuclear emergency planning. At Three Mile Island, Chernobyl, and Fukushima-Daiichi, officials discovered in the midst of an ongoing crisis that they lacked the information they needed to either diagnose the status of the damaged reactors or to evaluate the relative merits of possible emergency responses. In the latter two instances, this problem led to incorrect decisions that exacerbated the human, political, and economic costs of these accidents. In order to minimize the consequences of a possible future reactor accident, nuclear regulation must evolve to better anticipate the needs of emergency management, including both engineered and policy measures.

For historical reasons, emergency management is poorly integrated into the United States' current system of nuclear regulation. In the infancy of nuclear power in the United States, the Atomic Energy Commission (AEC) assumed that serious accidents would have immense radiological consequences, but that with adequate engineering precautions they could be prevented with a very high degree of assurance. Confident that a serious accident would be prevented, in the 1960s and early 1970s the AEC did not require reactor operators or local governments to plan for a nuclear accident with off-site consequences. The AEC and its successor agency, the Nuclear Regulatory Commission, only began to require that plant operators develop rudimentary—and often unusable—accident response plans in the mid-1970s.

The accident at Three Mile Island unit 2 in 1979 revealed that the United States was woefully unprepared to address a radiation emergency, but the NRC continued its tradition of directing its efforts largely toward the prevention of nuclear accidents, rather than the amelioration of their consequences.³

³ NRC historian J. Samuel Walker notes that, had the NRC realized during the crisis that a meltdown had occurred, it would have recommended, and Pennsylvania Governor Richard Thornburgh would have initiated, a full-scale evacuation, possibly including the state capital of Harrisburg. Given the lack of workable plans for moving the

While the Three Mile Island accident inspired considerable changes in the regulation of nuclear power in the United States, including the reallocation of responsibility for off-site accident planning to the newly-created Federal Emergency Management Agency (FEMA), the fact that substantial core damage occurred without obvious external consequences encouraged a sense of complacency about the safety of American reactor designs which the 1986 Chernobyl disaster only slightly affected. The NRC drew the conclusion that while serious nuclear accidents were more likely than previously estimated, they likely would not result in the dire outcomes predicted by earlier studies. The fact that the NRC shared statutory responsibility for managing such events with other government agencies, including FEMA and the Environmental Protection Agency, caused confusion and increased the difficulty of effective planning for nuclear emergencies.

The accident at Fukushima-Daiichi called into question many of the assumptions underpinning nuclear regulation in the United States, including those related to emergency management. In addition to dispelling comforting myths that nuclear plants built to Western designs would never experience catastrophic radiological releases, Fukushima-Daiichi also revealed the NRC's lack of confidence in its own emergency planning measures. The controversial decision of NRC chairman Gregory Jaczko to recommend that American citizens evacuate to 50 miles away from the stricken plant—far in excess of the 10 specified in the NRC's regulations for U.S. nuclear facilities—both caused an international incident and showed the dangers of employing an improvisational and ad hoc emergency response to a civilian nuclear accident.

In recent years the NRC has been mulling over a prospective transition toward a “risk management” regulatory framework that could potentially help improve emergency planning for nuclear accidents. In continuation of the multi-decade shift away from the “prescriptive” regulation that prevailed in the AEC era, risk management regulation would utilize “comprehensive, holistic, risk-informed, and performance-based” means to allow a more flexible approach to nuclear safety, rather than imposing rigid standards that might be inappropriate for a particular facility.⁴ With effective performance metrics and consistent implementation, the risk management regulatory framework could alleviate many of the present shortcomings of nuclear regulation in the United States. The risk estimation methods currently employed by the NRC, however, are unlikely to be adequate for these purposes due to their insufficient empiricism.⁵ Recent innovations in theoretical models of causality, as well as instrumentation and

population out of the area or maintaining continuity of government while depopulating the capital, the evacuation would have been disastrous of its own accord. J. Samuel Walker, *Three Mile Island: A Nuclear Crisis in Historical Perspective* (Berkeley: University of California Press, 2006), 241.

⁴ See Nuclear Regulatory Commission Risk Management Task Force, *NUREG-2150: A Proposed Risk Management Regulatory Framework* (Washington: Nuclear Regulatory Commission, 2012).

⁵ Since the mid-1970s, the NRC has employed the “Probabilistic Risk Assessment” (PRA) to estimate the likelihood of accidents at nuclear power plants. As currently practiced, PRA begins with the specification of hazards to be reduced, such as core damage, followed by the identification of initiating events that might result in these hazards. Analysts then construct event trees and fault trees to model plant response to initiating events, and estimate the frequency of the events composing the tree to predict the likelihood of a particular outcome. The event and fault trees utilized in the PRA privilege certain causal influences and discount others, often on an arbitrary basis. Although PRA analysts attempt to emphasize initiating events resulting in multiple system failures, as these have played a role in every major nuclear accident, the use of event and fault trees inevitably constrains their analysis to a

computer technology, offer the possibility of alternative performance measures that could better address a range of operational and regulatory challenges, particularly those faced by decision-makers during a nuclear crisis such as that at Fukushima-Daiichi.

Methodology:

This project aims to examine the experience of past nuclear accidents to determine the likely needs of emergency management following a similar event, and then to explore how these can best be met within a “risk-based” regulatory framework. To do so I will draw upon historical studies of the Three Mile Island, Chernobyl, and Fukushima-Daiichi accidents, as well as the operational history of nuclear power plants located in different nations with various design, operational, and regulatory practices. The case of the Soviet Union, which constructed numerous nuclear facilities with a dramatically different engineering philosophy than the United States, offers a particularly compelling example because the numerous accidents that occurred there differed qualitatively and quantitatively from those predicted by the NRC’s present regulatory assumptions. I will draw upon recent scholarship on causation from the machine learning field to propose a method for producing more empirical performance metrics from operational data that could be utilized in the proposed risk management regulatory framework.⁶ I am developing a library in Common Lisp to facilitate the creation of software models to evaluate the practical feasibility of these techniques for the purposes of civilian nuclear regulation.

Expected Findings:

I expect to find that risk-based regulation could enable greatly improved emergency planning for nuclear accidents at little or no additional cost. Without a willingness to break out of longstanding assumptions and more empirical methods, however, the Risk Management Regulatory Framework might offer little improvement over the status quo. International experience offers case studies that can be used to update regulatory assumptions and better plan for nuclear emergencies. To move from a paradigm focused primarily on accident avoidance to one that strikes a better balance between prevention and crisis management, the regulatory process should incorporate measures and techniques designed to gather the information emergency managers need both before and during an accident. I believe that methods derived from causal inference show promise as a means of achieving this goal.

Policy Contributions/Research Product:

On the basis of my research findings, I plan to produce concrete policy recommendations for reforming the regulation of civilian nuclear facilities in the United States, as well as emergency planning for nuclear accidents. To present these findings to the policy community, I will prepare an article manuscript providing a concise description of the challenges of emergency management in nuclear accidents

limited number of scenarios. Furthermore, the assignment of probabilities to initiating events, many of which have never occurred in practice, produces analyses premised largely on conjecture.

⁶ The recent work of researchers studying causality, such as UCLA computer scientist Judea Pearl, suggests that the event and fault trees used in the PRA could be converted into Markov models and then subjected to various causal tests on the basis of operational data treated as a time series, enabling their empirical verification. For a recent summary of this work see Judea Pearl, *Causality* 2nd ed. (Cambridge: Cambridge University Press, 2009). In addition to revealing safety problems current methods might overlook, the models produced by such an analysis might be used by emergency managers during a nuclear crisis to assess accident progression more accurately even with incomplete data.

revealed by Three Mile Island, Chernobyl, and Fukushima, and how the transition to an effective form of performance-based regulation could help alleviate these problems. I will also produce a more extensive report for RAND detailing my findings. If possible, I will also release any software tools I create for use by other researchers.

Target Audience:

I believe that my findings will be of interest to officials affiliated with agencies including the NRC, FEMA, and the Department of Energy, as well as the nuclear industry.

3. Sarah Kreps, CFR

Towards an Understanding of Threat Inflation in Nuclear Security

1. Project Description

The growth of the national security establishment after 9/11 has been well documented. As former Secretary of Defense Robert Gates noted, “there has been so much growth since 9/11 that getting your arms around that—not just for the CIA, for the secretary of defense—is a challenge.”⁷ The exact scale of that increase was made manifest by a two year investigation by The Washington Post, which showed the enormous increase in individuals with a security clearances, highly classified government buildings, and spending on counterterrorism. As former Director of National Intelligence, Admiral Dennis Blair, said, “After 9/11, when we decided to attack violent extremism, we did as we so often do in this country,” he said. “The attitude was, if it’s worth doing, it’s probably worth overdoing.”⁸

It is the “overdoing” that has drawn criticism especially among academics. John Mueller, for example, calls the reaction “overblown,” with the amount of resources expended and civil liberties suspended outstripping the threat.⁹ The culprits in this account are leaders touting threats that are “massively, perhaps even fancifully, inflated to produce and widespread and unjustified anxiety.” The populace in turn comes to believe that more aggressive actions are warranted.

This specific critique of the post-9/11 response joins a broader literature on threat inflation that has its roots in the Cold War. Richard Rhodes argues that the overkill of nuclear weapons—in which both the United States and Soviet Union had far more weapons than were needed to annihilate each other—resulted because of threat inflation: “appealing to fear for political advantage.”¹⁰ Generating concern about the risk of confrontation allowed the United States to justify spending more resources on developing nuclear weapons.

Existing accounts of threat inflation in the academic literature have argued that policy makers inflate threats in order to galvanize public support for more assertive defense postures or larger nuclear arsenals, but these accounts have generally ignored the role of the populace. Instead, they assume that leaders can able to use information asymmetries to manufacture consent. This project examines the limits to threat inflation in the context of nuclear weapons. Can leaders inflate any threat to the point that individuals will accept the need for more aggressive countermeasures? Have efforts to inflate nuclear-based threats been particularly successful? If so, is it because of individual predispositions or some attributes of nuclear weapons?

⁷ Dana Priest and William Arkin, “A Hidden World, Growing Beyond Control,” *Washington Post*, 19 July 2010.

⁸ Priest and Arkin, *ibid.*

⁹ John Mueller, *Overblown: How Politicians and the Terrorism Industry Inflate National Security Threats, and Why We Believe Them* (NY: Free Press, 2006).

¹⁰ Richard Rhodes, *Arsenals of Folly: The Making of the Nuclear Arms Race* (NY: Knopf, 2007), 110.

2. Research Methodology

2.1. Theoretical Development

The research answers these questions through three different lines of inquiry. The first is a theoretical component that has two different parts. A preliminary step is to establish definitional clarity on the question of threat inflation. Existing accounts imply some objective threat and corresponding appropriate response.¹¹ They ignore that almost invariably, assessments are made under large degrees of uncertainty and that rarely is there a clear, unequivocal threat assessment.¹² Indeed, any particular assessment of threat involves a range of plausible viewpoints. As such, just as one individual's reasonable threat assessment is another's threat inflation, the same could be said for threat deflation. To establish better conceptual clarity, I plan to offer an ex ante definition of threat inflation as well as the historical prevalence of threat inflation, which requires thinking about the "denominator" for threat inflation: what is the universe of possible cases—or even the unit of analysis—that could have been inflated and is the actual number that have been inflated notable and compared with what?

A second part of the theoretical development will draw on the psychology of fear to generate insights about the circumstances under which individuals are likely to be susceptible to threat inflation. Fear is an adaptive response but is also manipulable. As Thomas Hobbes observed, "fear is a highly plastic emotion...this dimension of unknowable harm can make fear ripe for abuse, with demagogues encouraging us to fear mystical spirits in the afterlife."¹³ Indeed, the use of fear appeals by political elites implicitly acknowledges that "when emotional tension is aroused, the audience will become more highly motivated to accept the reassuring beliefs or recommendations advocated by the communicator."¹⁴ Threat inflation succeeds then when it arouses fear, which makes individuals more vulnerable to the messages being communicated and in turn to the suggestions being offered. Threats that engender fear—whether conditioned or innate—will tend to "impair cognitive functioning"¹⁵ and be more exploitable while other threats that do not tap into either type of fear will be more difficult to exploit. Thus, the first part of the research explores the degree to which nuclear weapons engender both conditioned and innate fear, drawing on the psychology literature.

2.2. An Historical Study of Public Attitudes towards Nuclear Weapons

The second component of the research is an historical study of individual attitudes towards nuclear weapons, focusing on the populace's reaction to particular events such as the advent of the nuclear era in the 1950s, the Cuban Missile Crisis, end of the Cold War, and 9/11 attacks. The objective in this part of the research is to understand the ebb and flow of fears regarding nuclear weapons. Have individuals consistently feared the prospect of nuclear conflict or do some types of international crises trigger

¹¹ Mueller, *Overblown*; Chaim Kaufmann, "Threat Inflation and the Failure of the Marketplace of Ideas," *International Security*, Vol 29, No. 1 (Summer 2004), 5-48; 8-9.

¹² Robert Jervis, "Reports, Politics, and Intelligence Failures: The Case of Iraq," *Journal of Strategic Studies*, Vol 29, No. 1 (Feb 2006), 3-52.

¹³ Quoted in Corey Robin, *Fear: The History of a Political Idea* (Oxford University Press, 2004), 43.

¹⁴ Irving Janis and Seymour Feshbach, "Effects of Fear-Arousing Communications," *The Journal of Abnormal and Social Psychology*, Vol 49, No. 1 (1953), 78.

¹⁵ Leonie Huddy, Stanley Feldman, Charles Taber, and Gallya Lahav, "Threat, Anxiety, and Support of Antiterrorism Policies," *American Journal of Political Science*, Vol 49, No. 3 (Jul 2005), 593-608; 596.

greater periods of fear than others? Is there demographic variation in the way individuals react to the prospect of nuclear conflict, which might suggest some sort of experiential factor beyond the innate fear associated with nuclear weapons?

2.3. An Experimental Test of the Limits to Threat Inflation

To test the theoretical insights and further explore the patterns uncovered in the empirical analysis, I undertake an experimental study of individuals' reactions to threat inflation. This part of the analysis offers an empirical test of the limits to threat inflation by comparing individual responses across three different issue areas—nuclear, climate, and cyber. Are they all equally inflatable, how does the induction of fear mediate efforts at threat inflation? The experimental design allows me to hold demographic characteristics and circumstances constant in order to better understand the psychology of fear and its relationship to threat inflation across different types of threats. Because this part of the project is less straight-forward, I will offer some detail into my proposed experimental design.

To address the question of whether threats are equally inflatable, I use a between-subjects design, randomly assigning individuals to uninflated versus inflated characterizations of three different threats. I evaluate the inflatability of nuclear, climate change, and cybersecurity threats. The control group is told about one of the three security issues in clinical language to establish a baseline of latent public attitudes.¹⁶ The threat inflation group is exposed to a scenario in which the government issues an inflated threat assessment, which relies on worst-case scenarios and hyperbolic language about a threat. Individuals are then asked the extent to which they believe the particular security issue is “a critical threat to American interests.” They are also asked “to what extent do you agree with the following statement: enacting new federal policies to address this threat should be a high priority?” To gauge fear, which I expect to mediate the success of threat inflation efforts, individuals are asked whether the “prospect of this threat shakes your sense of personal safety and security.”¹⁷

I then seek to understand the causal mechanisms that underlie threat inflatability. I distinguish between individual-level and several threat-level characteristics, the former I associate with conditioned fear or life history and the latter with innate characteristics of the threat itself. While the individual-level characteristics are demographic—in particular the individual's age—the causal mechanisms underlying innate fear require a separate set of conditions dealing with attributes of the threat. Based on the theories of evolutionary responses to threat, I vary the characterization of threat along the main innate fear parameters—lethality, immediacy, and randomness—to gauge which is most influential in driving susceptibility to inflation: lethality, unpredictability, and distance. As a most likely threat to generate fear, I vary the attributes in the context of nuclear weapons and then assess the differences in the degree to which individuals regard the scenario as a critical threat to United States interests; and whether they would support taking actions recommended to prevent the danger. The innate fear argument would suggest that controlling for demographic factors, especially age, certain attributes of

¹⁶ Janis and Feshbach, 1953, 80.

¹⁷ Huddy et al, “Threat, Anxiety, and Support of Antiterrorism Policies,” 596.

threats would trigger innate fear that abets threat inflation as individuals search for additional information or cues on which to base their judgments.¹⁸

3. Anticipated Results and Impact

My hunch is that the public views nuclear threats in a different way from others such as climate and cyber, which explains Mueller's puzzle about why leaders can mobilize the populace about nuclear conflict but not climate change.¹⁹ What I do not know is whether this fear of nuclear weapons deals with the innate attributes of nuclear weapons and/or individuals' conditioned fears based on living through experiences such as the Cuban Missile Crisis or 9/11. Theoretical perspectives that draw on the psychology of fear, historical study of individual attitudes towards nuclear weapons, and an experimental analysis will help uncover these dynamics.

The existing literature on threat inflation raises important questions about how leaders mobilize public audiences behind more aggressive foreign policy decisions. The way scholars have studied this question, however, has left a number of gaps that I plan to take up in this project. The research is important both for theory and policy. In terms of theory, the project will contribute insights into the conditions under which leaders can achieve ambitious aims and, conversely, when their efforts to mobilize will fall short, constraining their ability to carry out expansive goals.²⁰ The policy implications are correspondingly significant, since the policy overreactions that can result from inflating threats and mobilizing the public can be costly in both blood and treasure. However, scholars and policymakers are largely disjointed in thinking about these questions and would benefit from closer conversation. The academic literature should be better grounded in an understanding of the policy incentives leaders actually face rather than largely divorced from politics. But policymakers could benefit from better understanding how the populace thinks about security issues such as nuclear weapons, why and whether they are fearful and how those emotions affect their preference for more aggressive policies, not so they can manipulate those attitudes but better manage expectations.

¹⁸ Ted Brader, *Campaigning for Hearts and Minds: How Emotional Appeals in Political Ads Work* (University of Chicago Press, 2006), 59, 137.

¹⁹ Mueller, *Overblown*, 10.

²⁰ Jack Snyder, *Myths of Empire: Domestic Politics and International Ambition*. Ithaca, NY: Cornell University Press, 1991.

4. David Palkki, CFR

Deterring Saddam Hussein's Iraq: Credibility Assessments in Theory and Practice

As a Stanton Nuclear Security Fellow at the Council on Foreign Relations, my primary task will be to revise my Ph.D. dissertation for publication by a leading academic press. The title of my manuscript is *Deterring Saddam Hussein's Iraq: Credibility Assessments in Theory and Practice*. Additionally, I will complete a journal article on the role of nuclear weapons in deterring Iraqi chemical and biological weapon use in 1991, and will submit this for publication. I will also present research on weapons of mass destruction and nonproliferation at academic and policy forums.

My research addresses how leaders assess the credibility of threats and assurances and how they seek to signal that their own commitments are credible. How leaders assess and signal credibility is at the heart of literatures on deterrence, diplomatic signaling, and coercive diplomacy. I chose this topic because of its importance to policymakers, defense and intelligence analysts, and scholars.

My dissertation draws heavily from newly available audio files of Saddam Hussein's private meetings with his most trusted advisers, which are available to scholars at the Conflict Records Research Center. The thousands of hours of taped meetings involving Saddam and his inner circle constitute unparalleled primary source material with which to assess the perceptions and decision-making of an authoritarian leader. This manuscript also draws on declassified interrogation reports of Iraqi principals, interviews with former Iraqi and American policymakers, and a variety of other sources.

According to Audience Cost Theory (ACT), leaders can increase the perceived credibility of their signals by making public commitments for which they will suffer domestic audience costs should they renege. Some leading scholars have written that only democratic regimes can strengthen the credibility of their commitments by generating domestic audience costs. Personalist regimes, exemplified by Saddam Hussein's Iraq, supposedly cannot send credible signals by means of public commitments that will increase the costs of backing down (the audience cost mechanism) and are unable to grasp the audience cost logic. Recent attempts to identify historical evidence of the audience cost mechanism at work, in most-likely cases involving democracies, have come up empty-handed, thus casting doubt on the empirical validity of the theory.

In contrast to previous scholarship, I find evidence that Saddam and his advisers assessed the credibility of U.S. threats and assurances based on whether they expected American leaders to lose political support for failing to make good on U.S. commitments. I also find that Iraq's leaders sought to signal that their public commitments were credible since they had generated domestic audience costs that were tying their hands. Saddam's Iraq, which scholars agree is a particularly difficult test for ACT, produces more historical evidence of the audience cost mechanism than has been found using most-likely cases. My research suggests that authoritarian regimes, even personalist regimes, may use their own domestic audience costs to signal credibility, and may assess the credibility of others' signals by reference to their domestic audience costs, to a far greater degree than has been recognized. The audience cost mechanism is certainly not the only means by which leaders seek to signal or assess

credibility, as some ACT enthusiasts have claimed, yet neither is it as insignificant or irrelevant as the theory's critics have supposed.

I provide case studies on Iraq's invasion of Kuwait, the role of American nuclear threats in Saddam's decision not to use chemical or biological weapons in the 1991 Gulf War, and Iraq's forced disarmament during the 1990s. Each case study refutes widespread myths. The first case study, for instance, addresses the argument that Saddam invaded Kuwait because he believed he had received credible assurances, including a "green light" from U.S. Ambassador April Glaspie, that the United States would not interfere. I find the evidence against the "green light" interpretation quite overwhelming. Saddam invaded even though he thought the United States might retaliate by attacking Iraq with nuclear weapons. It should not be surprising, from an audience cost perspective, that private signals from Glaspie and other U.S. officials had no effect on Saddam's assessments. This does, however, fly in the face of the conventional wisdom, with important implications for deterrence theory and policy.

The second case study demonstrates that U.S. Secretary of State James Baker's allegedly veiled threat to use nuclear weapons and threats to replace Iraq's Ba'athist leadership had no influence on Saddam's decision to refrain from using chemical or biological weapons in 1991. I find that Secretary Baker did not issue any nuclear threat, not even an ambiguous nuclear threat. Saddam refrained from using chemical and biological weapons for fear of nuclear retaliation, yet American threats had nothing to do with his restraint. Whereas former Secretary of Defense Robert McNamara writes that America's nuclear weapons were "incredible as a deterrent and therefore irrelevant" in 1991, my research indicates that the possibility of nuclear retaliation weighed heavily on Saddam and his advisers, with important consequences.

The third case study challenges various widely-held views about Iraq's forced disarmament, including that Saddam refrained from more clearly disarming, in part, for fear that doing so would anger Iraqi security personnel who believed that the regime had committed itself, through word and deed, to acquire and possess WMD. This chapter also demonstrates that U.S. threats and military deployments did not deter an Iraqi invasion of Kuwait in 1994, contrary to the conventional wisdom.

My research has several target audiences. Political scientists will be interested in how my book manuscript addresses prominent theoretical debates about signaling and credibility. Historians will be interested in the novel insights my research provides, based on a unique and unprecedented collection of records from an authoritarian regime. Strategists at US Strategic Command, US Central Command, and elsewhere within the US defense and intelligence community will be interested in how leaders of a recent adversary assessed American threats and assurances, and sought to signal to American policymakers that their own commitments were credible.