

THE NUCLEAR TERRORISM DISCONNECT:
ELECTORAL INCENTIVES AND U.S. POLICY RESPONSES

by

Samuel Thomas Reed

B.A., The University of California, Santa Cruz, 2007

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS

in

The Faculty of Graduate Studies

(Political Science)

THE UNIVERSITY OF BRITISH COLUMBIA

(Vancouver)

April 2013

© Samuel Thomas Reed, 2013

Abstract

This thesis investigates the range of U.S. threat assessments of—and policy responses to—nuclear terrorism in the United States. It finds that a series of disconnects characterizes political elites' and the American public's views and relationships to the politics of nuclear terror. The salience of issues related to nuclear terrorism is not closely linked to the severity of the threat. In turn, the perceived severity of the threat is not strongly correlated with the counter nuclear terror policy response. This thesis assesses the degree of citizen competence in nuclear politics and the degree of elite responsiveness to mass opinion. It also evaluates the full range of elite threat assessments and identifies a number of contemporary trends in public opinion on nuclear terrorism. The thesis advances both domestic and international case studies of American policy responses to the threat of nuclear terrorism.

Table of Contents

Abstract.....	ii
Table of Contents.....	iii
Acknowledgements.....	iv
Dedication.....	v
1 Introduction.....	1
1.1 Overview.....	1
1.2 Citizen competence and nuclear politics.....	2
1.3 Elite responsiveness.....	5
2 Nuclear Terrorism Threat Assessments.....	12
2.1 Overview.....	12
2.2 The conventional wisdom among elites.....	12
2.3 Skeptics emerge.....	15
2.4 Public opinion on nuclear terrorism.....	18
3 The Domestic Politics of Counter Nuclear Terror.....	22
4 Nuclear Terrorism and U.S. International Cooperation.....	25
4.1 Overview.....	25
4.2 123 agreements and ENR.....	26
4.3 Responsible nuclear powers: the US-India and US-UAE nuclear deals.....	28
4.4 Off the gold standard: Obama and American nuclear multilateralism.....	31
5 Conclusion.....	34
Bibliography	36
Appendices	43
Appendix A: Public Opinion Survey Questions.....	43
Appendix B: Congressionally Funded Detection Technologies.....	45

Acknowledgements

I would like to thank Dr. Paul Quirk for his sterling supervision and guidance.

Yana Gorokhovskaia also deserves my lasting gratitude for her tireless support.

To Ralph and Candice Reed

1 Introduction

1.1 Overview

Recent literature in US politics reflects conflicting views on the relations between elites and masses in policymaking. This thesis reviews and analyzes competing expectations about the nature of opinion in each group, their relationship to each other, and their influence in policymaking. The range of alternative views extends from the possibility that mass opinion is rational but ignored or manipulated by elites, to the possibility that mass opinion is largely irrational and has adverse impacts on policy. Section 1 employs foreign policy as a means to consider these alternatives. This general literature review focuses on citizen competence, elite responsiveness, and electoral incentives, and it generates expectations for the case study of nuclear terrorism. It also facilitates a discussion of politicians' incentives as they relate to low-probability, high-risk events.

Policy towards nuclear terrorism is an important case for a variety of other reasons. First, nuclear issues enjoy a high degree of societal awareness in the US. This issue salience is important, because it creates a wider body of public opinion and more opportunities for citizen engagement. Next, there is a high potential for irrationality and bias in opinions about—and assessments of—nuclear terrorism, because of the highly complex nature of nuclear technology, limited amounts of declassified information, and the widespread fear associated with the issue. The examination of nuclear terrorism focuses on threat assessments in section 2, before moving on to domestic and foreign counter nuclear terror policies in sections 3 and 4, respectively.

This thesis studies multiple examples of domestic counter nuclear terror policies, including increasing security at nuclear facilities and investments in nuclear detection technologies. In the international sphere, bilateral nuclear cooperation agreements and the multilateral Nuclear Security Summit process have important implications for preventing nuclear terrorism. Through these case studies, this thesis finds that there is a disconnect and inconsistency between nuclear terrorism threat assessments and counter nuclear terror policies. Perceived nuclear terror threats do not perfectly align with the actual security environment. Furthermore, while the threat of nuclear terrorism is seen as dire by elites and the public alike, counter nuclear terror expenditures have been relatively modest. Finally, U.S. nuclear trade agreements defy standardization and have been applied inconsistently over the last decade, which has troubling implications for future nuclear terror threats. This thesis offers a preliminary examination of a number of potential explanatory factors, including the psychological effects of pervasive fear, the perverse electoral incentives related to low-probability events, and the tradeoffs between competing goals in U.S. and international nuclear politics. Overall, the thesis finds that these inconsistencies are possibly the result of a misinformed public and insufficient electoral incentives.

1.2 Citizen competence and nuclear politics

This section will summarize some general theory and findings on the subjects of public opinion and citizen competence vis-à-vis foreign policy in order to generate expectations for the case of nuclear terrorism. Section 2.2 discusses public opinion on nuclear terrorism more directly. The conventional wisdom holds that public opinion on foreign

policy is prone to wild fluctuations and suffers from low levels of information. Still, there is reason to believe that citizens' beliefs are logically structured around guiding dispositions.

Gabriel Almond's *The American Public and Foreign Policy* (1960) is one of the earliest and most influential forays into how the public thinks about American foreign policy. Its conclusions are quite pessimistic. This cynicism towards public opinion is most notably encapsulated in Almond's "mood theory." It holds that attention to—and interest in—foreign policy is quite low, and prone to wild and unpredictable fluctuations in times of crisis. According to Almond, the general public's mood swings are a function of its indifference to foreign affairs, which is periodically punctuated by crises short of war (Caspary, 1970, 536). Such an international event can inject vague apprehension into the public consciousness, but divorced from preexisting attentiveness and minimum levels of foreign policy knowledge, this sudden awareness is prone to manipulation, distortion, and general volatility. In short, according to this view, the public's foreign policy mood is uninformed and unpredictable. Almond's appraisal of the American public on foreign policy is consistent with the larger body of literature on public opinion being written at the time.¹ For instance, *Voting* (Berelson et al., 1954) and *The American Voter* (Campbell et al., 1960) both paint the average voter as uninformed, misinformed, uninterested, and inattentive.

¹ It was also consistent with the preceding two centuries of American history. From the founding of the Republic, elites have been wary of public opinion. In *The Federalist Papers*, James Madison and Alexander Hamilton warned of the "passions," "fluctuations," "violent movements," "temporary errors and delusions," and "transient impulses" that might affect the public and its collective preferences (Federalist Papers nos. 63 and 71, quoted in Page and Shapiro, 1992, 3). The considerable doubts leveled against the rationality of public opinion even persisted through the populist movement of the early twentieth century, which gave rise to the 16th and 17th Amendments to the Constitution (federal income tax and direct election of senators, respectively). To wit, in the 1920s Walter Lippmann disparaged the inherent folly of public opinion and the "false ideal" of collective rationality (Lippmann 1922, 1925, quoted in Page and Shapiro, 1992, 4, 386).

There are multiple reasons why ordinary Americans lack foreign policy sophistication. First, information on the subject is highly centralized, especially regarding issues of national security. Foreign policy decision-makers have proven quite adept at constraining the release of sensitive information. As a result, the media often reproduces official narratives regarding critical developments abroad. The end result is that even if Americans desire to find a way out of the foreign affairs wilderness, highly managed and restricted flows of information may impede their progress. Further, Bernard Cohen describes the structure of American opinion on foreign policy as intrinsically pyramidal (1995, 55-56). The large base of the pyramid is composed of the disinterested general public, estimated at about 80 percent of all Americans. The attentive public occupies the next segment, but only about 15-20 percent of the masses reside here. The top of the pyramid is filled by a “very thin layer of active participants, in and out of government, who engage in foreign-policy debate, discussion, and decision,” which amount to a paltry one percent of the American populous (56). The structure of American public opinion on foreign policy, then, seems to fly in the face of normative democratic theory.

One might expect the prevailing attitude regarding public opinion on foreign policy to extend to issues related to nuclear security. Kerry G. Herron and Hank C. Jenkins-Smith, the most prolific scholars currently conducting public opinion research on nuclear weapons, beg to differ. Since 1993, Herron and Jenkins-Smith have meticulously examined the evolution of post-Cold War collective preferences and attitudes, especially regarding nuclear weapons. Along with other researchers at the National Security and Nuclear Politics Project at the Center for Applied Social Research, they are mostly concerned with the evolution of public opinion on the issues of nuclear deterrence, the

size of the nuclear arsenal, nuclear force modernization, and terrorism. They acknowledge that deriving conclusions about citizen competence from such a wide field of data is inherently tricky, because evidence for competing positions is easily located. In *Critical Masses and Critical Choices*, they write, “evidence of policy ignorance, and malleable preferences would seem to justify skepticism about the contributions of the public to reasoned [security] policymaking. But in our view, such a judgment would be inaccurate and misleading” (2006, 169).

Their most compelling counterargument concerns the structure of public beliefs, which is a standard adopted from Converse (1964). They find a “coherent and stable structure in public beliefs about security issues,” such that broad dispositions like political culture, political ideology, and partisanship are all linked with specific policy preferences (2006, 175). They write, “from the perceived importance of retaining nuclear weapons, to issues of testing and ballistic missile defenses, to nuclear spending, consistent and statistically significant relationships [between ideology, partisanship, and beliefs] hold over time” (175). This is an important finding, and it will be discussed again in Section 2.2.

1.3 Elite responsiveness

Elite surveys and behavioral patterns within decision-making structures indicate that policymakers *do* care about what the general public thinks. Unfortunately, this attentiveness to public opinion is derived more from simulated responsiveness than it is from a normative commitment to democracy. Once again, a summary of the literature on foreign policy and elite responsiveness will be used to generate expectations for the case of nuclear terrorism.

Determining the extent to which public opinion affects the creation of foreign (and nuclear) policy is difficult. Cohen argues that American public opinion is important to the foreign policy elite, despite the fact that it is institutionally formless and that true responsiveness is utterly hopeless (1995, 69-70). By institutionally formless, Cohen means that the creation of opinion has far outstripped its ability to be cogently related to elected officials. In America, he explains, members of Congress are not the conduits by which public views on foreign affairs and nuclear policy are related to State Department officials. In the early 1970s, Cohen interviewed a number of State Department officials, and he found the following phrase to epitomize their view of the masses: “to hell with public opinion...we should lead and not follow” (Cohen, 1973, 62, quoted in Powlick, 1991, 612). Not much had changed in Washington twenty years later. By interviewing National Security Council (NSC) staff and State Department officials in the early 1990s, Phillip Powlick encountered an overwhelmingly negative view of the public’s level of sophistication on matters of foreign policy. Curiously, though, these same officials ardently believe that public input into the formulation of foreign policy “is both desirable and necessary” (625-26). In fact, Powlick asserts that this belief is “so widespread as to suggest the existence of a ‘norm’ within the bureaucratic subculture” (634). Given elites’ skepticism of the rationality of public opinion—and their simultaneous, yet contradictory insistence on holding it in high esteem—the alternative to abandoning a “correct” but unpopular policy is to sell it to the public. “We might expect, then, a foreign policy apparatus as much interested in ‘educating’ the public...as in following the public’s lead” (635). This predilection for public education is not difficult to explain. It emanates from elites’ belief that defects in public opinion are the result of inadequate levels of

information, not cognitive inability. To policymakers, the public is not a confederacy of dunces; it is simply under-informed.

In *Politicians Don't Pander* (2000), Lawrence R. Jacobs and Robert Y. Shapiro discuss how elites can seize on the public's deficit of policy knowledge. Simulated, or instrumental, responsiveness occurs when politicians use manipulative rhetoric, rather than education, in order to shape public opinion and advance policy goals. The potential for simulated responsiveness in counter nuclear terror (CNT) policy is potentially high. This is because most of the pertinent information relating to the threat of a nuclear terrorist attack is classified, and the policy responses for countering the threat are highly technical and complex. In theory, this combination could create opportunities for elite manipulation of public opinion. In their pursuit of nuclear policy goals, do politicians use manipulative rhetoric or appeal to broad dispositions or partisan identities as a substitute for full information in their pursuit of nuclear policy goals? The next section begins to address this question by focusing on the incentives that politicians have for responding to the prospect of low probability events.

1.4 Low probability events, electoral incentives, and going public

Dick Cheney once asserted that if there was even a one percent chance that al Qaeda had a nuclear weapon, then America would have to “pursue it as if it were true” (quoted in Mueller, 2010, 198). While Cheney's recommendation underscores the seriousness with which low-probability, high-impact events should be taken, the incentives for elected officials are actually quite perverse. If politicians are primarily motivated by electoral

concerns, then they are likely to maximize spending on high probability events.

Retrospective evaluation is a popular mechanism by which voters hold their elected officials accountable, so politicians have a massive incentive to discount low probability events; it is difficult for elected officials to claim credit for continuing to prevent something that is already unlikely to happen, no matter how salient the issue. This bodes ill for CNT spending.

Nuclear issues benefit from an “exceptionally high floor of awareness” (Graham, 1988, 321). Graham analyzes data from 700 national public opinion surveys that include thousands of questions on arms control and nuclear weapons, and finds that 90 percent of respondents are aware of nuclear weapons and related issues at some basic level. This is a level of societal engagement that dwarfs other foreign policy issues. A high level of concern seems to characterize and inform this widespread awareness. Question 1 in Appendix A shows that immediately after 9/11, 63 percent of respondents believed that al Qaeda was likely to have access to nuclear weapons—something they still have not come close to achieving. Additionally, question 2 in Appendix A shows that four years after 9/11, 75 percent of respondents believed the United States was *not* adequately prepared for a nuclear, biological, or chemical attack.² If fear motivates this view rather than low levels of information, then exposure to reports about Congressionally funded research and development of radiation detection technologies (see Appendix B) should not affect public assessments of nuclear terrorism preparedness. This would provide support for the notion that in highly complex policy fields, irrational policy moods can trump full information.

² This question does not specifically refer to terrorists as the perpetrators.

Given the preceding discussion, what reasons do politicians have for incorporating public opinion into the policy process? Herron and Jenkins-Smith believe that their data indicates that public opinion can signal areas of potential support and opposition for nuclear policy choices. Moreover, the surveys also reflect the public's broad dispositions and policy priorities. "The American people ultimately must validate and sustain US security policies—including nuclear security. Failing to carefully consider public beliefs about nuclear weapons and preferences for the nuclear future would be a major policy omission" (2009b, 2).

Their case is a compelling one, and is firmly in the tradition of Robert Dahl, whose democratic commitment to increasing mass participation extended to the field of nuclear weapons policy. Dahl convincingly argues against the Platonic notion of nuclear guardianship when he claims that the tradeoffs and uncertainty inherent to nuclear decision-making eliminate any genuine claim to expertise on the part of elites (1985, 88). Sidney Drell paraphrased Clemenceau when he remarked that nuclear policy was too important to be left to the experts (1983). The normative argument for expanding participation in nuclear policymaking is highly persuasive, but the analysis in this thesis suggests that such a development is unlikely. The public is too misinformed and the electoral incentives are insufficient.

President Obama has paid a great deal of attention to nuclear issues during his term in office. Besides the issue of Iranian enrichment, however, nuclear concerns did not play a crucial role in either of his campaigns. In fact, Obama would have been content to ignore nuclear politics altogether in 2012, but he was foiled by a hot microphone. Obama was heard surreptitiously whispering to former Russian President Medvedev that discussions

on missile defense would have to wait until after he had secured reelection, and that the Russian Federation could expect a more pliant position from his Administration at that time (Goodman, 2012). Obama's decision—much like Clinton's 2000 deferral on BMD—was likely made so the voting public would not interpret a willingness to negotiate on missile defense as a weakness.³ This supports the notion that elites view the public's nuclear preferences as poorly informed and unworthy of consideration when seeking election.⁴

Instead, on key nuclear issues Obama has often invoked a strategy known as “going public.” When a president announces a policy to the citizenry, he signals resolve to foreign governments in the international bargaining process, because he incurs domestic audience costs (Baum, 2004, 604). That is, retrospective evaluations by voters ensure that a president will only recant a foreign policy on which he has gone public at his own electoral peril. In this way, the electoral accountability link is strengthened, and the president uses public opinion as leverage in international bargaining. In his 2009 Prague speech, President Obama went public on two important nuclear issues. First, he expressed “America's commitment to seek the peace and security of a world without nuclear weapons;” second, he announced a “new international effort to secure all vulnerable nuclear material around the world within four years” (Office of the Press Secretary, 2009b). This second statement launched the Nuclear Security Summit, which is discussed in Section 4.4. In light of Herron and Jenkins-Smith's finding that nuclear beliefs and

³ Herron and Jenkins-Smith also note that mass opinion was wildly misinformed about American BMD capabilities at the time of the 2000 elections (2006, 167).

⁴ Another candid statement from Obama shows that he also views some elite opinion as poorly informed. Former Alaska Governor and Vice Presidential candidate, Sarah Palin, likened Obama's desire to reduce the American nuclear arsenal to daring a schoolyard bully into a provocation. When asked about the comments, Obama brushed them aside, saying, “[t]he last I checked, Sarah Palin is not much of an expert on nuclear issues” (Reuters, 2010).

preferences are structured according to broader political dispositions and partisan affiliations, going public on nuclear policies recommends itself to the savvy politician that can activate the appropriate biases in the public.

2 Nuclear Terrorism Threat Assessments

2.1 Overview

This section addresses elite and citizen views of nuclear terrorism. First, the lion's share of policy elites rate the threat of nuclear terrorism as one of the most pressing in the world. Next, six trends in public opinion on nuclear terrorism help facilitate the application of Almond's mood theory to nuclear terrorism. Finally, the emergence of a skeptical camp in the academic and policy literature is discussed.

2.2 The conventional wisdom among elites

The prevailing school of thought among elites is that nuclear terrorism is an imminent threat to the American homeland and is one of the highest-level security priorities today.⁵ The overwhelming majority of academics, policy analysts, military advisors, intelligence analysts, and politicians maintain that the threat of nuclear terrorism is real and imminent. Presidents George W. Bush and Barack H. Obama have also explicitly and repeatedly endorsed this view. During his first Presidential Debate with Sen. John Kerry in 2004, Bush was asked to name the "single most serious threat" facing the nation. He asserted that it was a nuclear weapon "in the hands of a terrorist enemy" (Transcript, 2004). Over eight years later, a new president assesses the threat in a similar manner. In December of

⁵ Some academics and policy analysts insufficiently decouple nuclear terrorism from chemical, biological and radiological terrorism (collectively known as CBRN). A holistic approach to evaluating the probability of mass destruction terrorism artificially inflates the likelihood of nuclear attack, because the technological barriers to nuclear terrorism are orders of magnitude higher than its weapon of mass destruction (WMD) alternatives. As a result, the CBRN camp is largely excluded from the discussion, because its focus is too broad. It is worth noting that the CBRN literature is still valuable to nuclear-centric scholars and analysts. For instance, Cole (2011) makes some trenchant points about variation in terrorist intentions and decision-making, which underscores the difficulty of making accurate threat assessments.

last year, Obama spoke to the Nunn-Lugar Cooperative Threat Reduction Symposium, and declared, “I continue to believe that nuclear terrorism remains one of the greatest threats to global security” (Office of the Press Secretary, 2012).⁶

In addition to the President, there are a number of nuclear policy experts that also share this view. “The Lugar Survey on Proliferation Threats and Responses,” conducted by former Senator Richard Lugar (R-IN) in 2005, was sent to 132 “non-proliferation and national security experts” (2005, 4). Sen. Lugar received 85 responses.⁷ For the purposes of this paper, one of the most one of the most relevant questions in the survey was, “[i]n your opinion, what is the probability (expressed as a percentage) of an attack involving a nuclear explosion occurring somewhere in the world in the next five years?” This question was then repeated, with a time frame of ten years. Lugar’s analysis of the responses is here reproduced:

“When the time frame for a nuclear attack was extended to ten years, the respondents were much more pessimistic. The median answer doubled from 10% to 20%, while the average response nearly doubled to 29.2%. Only one of the 76 respondents thought the risk of a nuclear attack was zero. At the other end of the spectrum, four respondents judged the risk to be 100%. Overall, 62% of respondents (49 of 79) estimated the risk of a nuclear attack over the next ten years to be between 10% and 50%. (2005, 14).

Of course, these questions are not specific to nuclear terrorism, so an additional, clarifying question was posed: “In your opinion, if a nuclear attack occurs during the next 10 years, is it more likely to be carried out by terrorists or by a government?” Only 21

⁶ By March 2013, “cyber-attacks and cyber-espionage on crucial infrastructure” had leapfrogged nuclear terrorism and assumed the top spot on the director of national intelligence’s list of global security threats (Dilanian, 2013).

⁷ Lugar underscores that “this study is not meant to be a scientific poll of the entire national security community. Rather, my intent was to discover consistencies and divergences in attitudes about nonproliferation among a large and diverse group of well-informed experts. Effort was made to recruit many experts from both the right and the left. Surveys were also sent to several dozen experts in foreign nations” (2005, 4).

percent of respondents believed that a nuclear-armed government would use their ultimate weapons in an attack, while the other 79 percent viewed terrorists as the likely culprits. There is a disconnect between this threat assessment and the actual demographics of the “nuclear club.” At the time of the survey, eight nations possessed nuclear weapons, North Korea was a year away from testing its first, and Iran had been viewed as a nuclear aspirant for years. Meanwhile, only three terrorist organizations had ever expressed even a passing desire for nuclear arms: “the *Aum Shinrikyo* cult in Japan, Chechen rebels in Russia, and al Qaeda” (Jenkins, 2012, 121). In the post 9/11 context, it seems likely that the “Lugar Survey” respondents were most immediately concerned with al Qaeda’s nuclear intentions.⁸

The belief that non-state actors are a greater nuclear threat than other nuclear weapons states is evocative of a disconnect between perceived and actual risks. Does fear help explain it? In the forthcoming *Oxford Handbook of Political Psychology*, J.G. Stein discusses the persistent belief among the American public and its leaders that a terrorist attack is a primary concern. She writes:

“fear conditioning is also part of the explanation [for the persistent concern with terrorism]. Through repeated practice and institutionalization, a self-sustaining climate of fear was created in the United States by the Bush administration...Once a threat is perceived and institutionalized, it becomes self-perpetuating and it consequently becomes far more difficult to wind down the well-established embedded threat perceptions that drive conflict” (2013, 32-33).

⁸ Most experts have been overzealous when it comes to predicting nuclear terrorist attacks. Throughout the last decade, elites have warned about the imminent possibility of a nuclear attack within five or ten years. The time has elapsed on most of these assessments. However, Philip Tetlock bails out our experts when he writes, “[p]rediction and explanation are not as tightly coupled as once supposed. Explanation is possible without prediction....Conversely, prediction is possible without explanation” (2006, 14).

While her chapter does not refer specifically to *nuclear* terrorism, in this excerpt Stein seems to be describing how fear of terrorism generally operates according to a ratchet effect, because terrorism operates on a psychological level and becomes “self-sustaining.” The degree to which a readily accessible fear of terrorism either motivated or inflated expert threat assessments is unclear. Demonstrating a link would require additional research, including a new round of elite surveys.

Overall, elites treat the threat of nuclear terrorism with grave concern, even though they recognize the probability of such an attack occurring as relatively low. Since the stakes are so high, however, any significantly greater than zero probability merits serious attention. There are some analysts that view the purported threat of nuclear terrorism with a healthy dose of skepticism. This paper now turns to them.

2.3 Skeptics emerge

There is a small, yet burgeoning school of thought that holds that the threat of nuclear terrorism is “vanishingly small,” and that the alarmists have wildly overblown the potential for a nuclear terrorist attack (Mueller, 2008, 2). The predominant thinkers in this camp are John Mueller (2008, 2010) and Brian Michael Jenkins (2011, 2012).⁹ A full recapitulation of Mueller and Jenkins’ arguments is not warranted here, but two of their main points deserve attention.

⁹ Mueller has made a career out of attempting to debunk nuclear weapons of their ostensible, awesome power. His 1988 article, “The Essential Irrelevance of Nuclear Weapons,” struck a nerve in academia. It inspired a thoughtful critique from Robert Jervis (1988), while also eliciting dismissive cries of “complacency” from others (Blight, 1992, 83).

First, Mueller and Jenkins find most terrorist nuclear acquisition scenarios exceedingly dubious. In what Mueller deems the most likely scenario, he details 20 hurdles that a terrorist organization would have to surmount in order to successfully carry out a nuclear attack. He calculates that the probability of clearing all the hurdles is more than one in three billion. He clarifies that this is a *conservative* estimate (2010, 186). Mueller posits that the most likely scenario is the smuggling of a pre-assembled, highly enriched uranium (HEU) fueled improvised nuclear device (IND) into the US. Others counter that since thefts of weapons-grade plutonium and HEU have already occurred, a more likely scenario is the smuggling of HEU into the US in order to build and detonate an improvised nuclear device (IND) on American soil (Bunn and Wier, 2006, 137).¹⁰ However, this distinction would only remove three (possibly four) of Mueller's 20 hurdles. In turn, this would only marginally reduce his conservative estimate of a successful attack. Jenkins, on the other hand, believes, "[t]he most plausible mode of terrorist acquisition would be not the clandestine fabrication of a nuclear device, but the theft of a nuclear weapon...or the seizure of one during a period of political upheaval and chaos." Still, he believes this scenario to be "extremely unlikely" (2012, 119).

Second, "the threat of nuclear terror floats above the world of known facts" (Jenkins, 2011, 88). Therefore, threat assessments are heavily biased by opinion and speculation. One such speculative argument concerns terrorists' nuclear intentions. Jenkins argues that most risk assessments treat terrorists' intentions and capabilities as interchangeable. "Serious thinking by terrorists about how they might use a nuclear weapon—of which we have very little evidence—would cause all but a handful of nihilist fanatics to conclude

¹⁰ Plutonium is far more difficult and dangerous to transport than HEU, making it less likely to be selected by non-state actors (Mueller, 2008, 6-7).

that nuclear terrorism...would be counterproductive to their cause and their survival” (2012, 119-20). This view clashes sharply with President Obama’s position. At the aforementioned Cooperative Threat Reduction Symposium, Obama treated terrorist intentions as a known matter of fact. “And make no mistake, if [terrorists] get [a nuclear weapon], they will use it” (Office of the Press Secretary, 2012). Obama’s certitude belies Jenkins’ assertion that we have remarkably little evidence about what terrorists actually think about nuclear weapons. Simply put, radical militant organizations publish neither Defense White Papers nor Nuclear Posture Reviews. Furthermore, one lesson learned from the Cold War was that US policy elites had a poor track record of assessing and predicting Soviet nuclear intentions and doctrine, despite the certainty which underscored much of America’s deterrence posture (Kaplan, 1983). The President is privy to an ocean of classified information, but it is doubtful that he has unassailable proof of terrorists’ nuclear intentions.

This wave of skepticism merits some consideration. Mueller’s points about tempering hyperbole in our nuclear assessments, and Jenkins’ suggestion that we deepen our understanding of non-state actors’ nuclear intentions are particularly compelling.

Nevertheless, most elite opinion is deeply concerned with the grim specter of nuclear terrorism, however remote. The next section demonstrates that the public concurs with this majority opinion, though it demonstrates many of its own novel characteristics.

2.4 Public opinion on nuclear terrorism

We might expect public opinion on nuclear terrorism to fluctuate wildly (similar to Almond's mood theory), because of low levels of information and a higher than usual incidence of fear. Public attitudes about nuclear terrorism are of ancillary concern in Herron and Jenkins-Smith's survey research at the Center for Applied Social Research. Still, six prominent trends concerning the subject can be identified in their work and in additional survey questions from other sources.

First, public evaluations of the threat posed by nuclear terrorism coincide with the conventional wisdom among elites: it is real and imminent. Again, Herron and Jenkins-Smith write, "[p]ublic estimates of current and future threats of nuclear terrorism consistently are high in absolute terms and comparatively stable over time" (2006, 67). Importantly, this finding is derived from the period 1993-2006. The exogenous shock of 9/11 produced a blip upwards, but the trend had stabilized by 2006. One explanation for this is that the baseline was already so high that a sustained upward trajectory in threat assessments simply was not very likely without multiple crises to sustain it. There is already an enduring state of nuclear concern. The salience of the issue, then, seems disconnected from the perceived severity of the threat and the availability of accurate information at any given time.

The second trend suggests that Americans can distinguish between the threats posed by non-nuclear and nuclear terrorism. "[I]t appears that the general public differentiates between the nonnuclear risks deriving from the terrorist attacks of 9/11 versus the risks posed by others' nuclear weapons—including nuclear terrorism—and do not conclude

that overall external *nuclear* risks have changed appreciably [between 1993 and 2003]” (Herron and Jenkins-Smith, 2006, 26, original emphasis).

The third trend noticed by observers of public opinion on nuclear terrorism is that the public greatly values the deterrent effect of America’s nuclear arsenal. This is consistent with Herron and Jenkins-Smith’s larger body of work, which finds a high valuation of deterrence across nuclear issues, regardless of its relevance. While deterring other states from using nuclear weapons and other WMDs is higher, the authors find above midscale mean importance for “preventing nuclear proliferation to terrorist groups” (2009b, 4).

This is at odds with what most of the policy community thinks on the subject. They write:

“While these public valuations [of the perceived importance of US nuclear weapons for deterring the use of nuclear weapons by non-state terrorist groups] exceed the negligible utility some policy specialists might attribute to US nuclear weapons for deterring WMD terrorism, they further illustrate the importance ordinary Americans place on the deterrent role of US nuclear weapons” (2009b, 5, footnote text).

The authors are right to point out that most policy experts are less than enthusiastic about the prospect for deterring nuclear terrorism. In a recent article, Martha Crenshaw effectively argues that deterrence theory is a poor fit for counterterrorism policy (2012, 142-145).

Fourth, if the US is unable to deter nuclear terrorism, the public is more willing to respond with a nuclear strike than are elites. Questions 3, 4, and 5 in Appendix A ask respondents how the US should respond to a nuclear terrorist attack. The survey results demonstrate that the public strongly supports the retaliatory use of nuclear weapons after such a disaster. More specifically, 59 percent favor the retaliatory use of nuclear weapons (question 3); 67 percent think the US would be justified using nuclear weapons against

terrorist facilities (question 4); 57 percent think the US would be justified using nuclear weapons against major cities in countries that harbor terrorists (question 5), with all three questions showing low rates of “unsure” responses. The G.W. Bush and Obama Administrations, for their parts, have been less willing to commit to a retaliatory policy. For example, in the June 2011 National Strategy for Counterterrorism, “[t]here is no reference to threats of overwhelming force or what the United States would do if prevention [of nuclear terrorism] fails” (Crenshaw, 2012, 142). We are still waiting for an official U.S. policy, which might not be forthcoming, but for now it is clear that the public is strongly supportive of retaliating in kind to a nuclear attack.

Fifth, there is robust public support for spending to counter nuclear terrorism. In seven telephone and Internet surveys from 2005 to 2009, Herron and Jenkins-Smith found that strong majorities of Americans support substantially increasing spending to prevent nuclear weapons from entering through US ports (2009a, 113), and to improve American capabilities for responding to large-scale acts of terrorism (114).

Sixth, Herron and Jenkins-Smith’s survey responses concerning nuclear terrorism demonstrate clear demographic trends. For example, men fear WMD terrorism less than women. Also, as age increases, so too do assessments of the WMD terrorism threat (2009b, 23).

Almond’s mood theory warrants reconsideration in light of this information. How susceptible are public assessments of nuclear disasters to wild fluctuations spurred by policy moods? Question 6 in Appendix A offers some preliminary evidence on the subject. The question asked New York residents, “if there were to be a nuclear emergency in New York state today, do you think it is more likely to be the result of a

terror attack or an accident at a nuclear power plant?” Power plant was the clear choice, with a 52 percent response rate, compared to 38 percent for terrorism. Importantly, this question was posed five months after the Fukushima disaster, which suggests Almond’s mood theory could have influence. The “availability heuristic” is also relevant, and perhaps in operation. This refers to “dramatic events which come readily to mind [and] are perceived to be more likely than they actually are” (Levy, 1994, 14). Repeated iterations of this question would help to determine how variable opinion on this issue actually is. Would the shock of Fukushima wear off after a few years, similar to the transient effect that 9/11 had on Herron and Jenkins-Smith’s survey data?

In sum, the public can discern between nuclear and non-nuclear threats, and its perception of the threat posed by nuclear terrorism is consistently high. Citizens have a great deal of misplaced confidence in the American nuclear arsenal’s capability to deter nuclear terrorism, but they are enthusiastic supporters of substantially increasing funding for other means of preventing it. Also, the public has expressed a firmer commitment to resort to nuclear retaliation, while elites have been reticent to commit to such a stance. Now that elite and citizen views have been thoroughly established, the next two sections discuss the policy response that has flowed from this abundance of concern.

3 The Domestic Politics of Counter Nuclear Terror

Nuclear issues enjoy a high degree of basic societal awareness, but despite this salience, they are rarely decisive voting issues. The grassroots Nuclear Freeze Campaign reached its high water mark when it was placed on the Democratic presidential platform at the Party's 1984 Convention, but Senator Mondale only carried one state that November (Wittner, 2010). More recently, when President Clinton deferred judgment on ballistic missile defense (BMD) late in his second term, the issue seemed ripe for the 2000 campaign trail. Not so, reports the Center for Arms Control and Nonproliferation. "[D]uring the four presidential and vice presidential debates, there was not a single question on missile defense. Neither George W. Bush nor Al Gore have done more than give passing mention to the issue...The same is true for congressional races across the country" (2000).¹¹ It is common for domestic politics to trump foreign policy during election season, although national security and the War in Iraq were decisive factors at the polls in 2004 and 2006. Still, it is difficult to envision an election hinging on nuclear politics, unless it was held on the heels of a grisly nuclear attack.

Since 9/11, the US has redoubled its efforts to prepare against a nuclear terrorist attack in a number of ways. First, the Nuclear Regulatory Commission has worked to increase the security of the facilities it oversees. Two examples include the training of security staff at installations to counter armed assaults and reinforcing reactors to withstand an attack with a commercial airliner, but not all of these efforts have been met with success (Holt and Andrews, 2012). To wit, in late July 2012 a break-in that "nuclear experts call the biggest security breach in the history of the nation's atomic complex" occurred at the Y-

¹¹ Additionally, with the departures of Sens. Nunn (D-GA), Lugar (R-IN), and Kyl (R-AZ) in recent years, the Senate has lost a wealth of nuclear expertise.

12 National Security Complex in Oak Ridge, TN (Broad, 2012). Sister Megan Rice and her two of her pacifist accomplices penetrated Y-12's inner sanctum, and splattered the side of a warehouse that contained large amounts of HEU with blood and biblical slogans. Investigations into this incident and reforms for improving the security at Y-12 and similar installations are currently ongoing.

The Department of Homeland Security's (DHS) Domestic Nuclear Detection Office (DNDO) is working on a number of initiatives to secure the homeland against nuclear terrorism. It funds research centers, is working to build a global nuclear detection architecture (GNDA), and is working to advance the field of nuclear forensics to aid in attributing nuclear materials after an attack. To aid the DNDO, Congress has funded research and development of a wide variety of nuclear detection technologies that seek to shore up the deficiencies of current detection equipment (Medalia, 2010). All told, the Federal Government is spending roughly \$USD 50 million each year on nuclear detection (for a detailed picture of expenditures on detection technologies, see Appendix B). This is by no means a paltry sum, but as was shown above, the public substantially favors increasing the funding available for preventing WMDs from entering the US. This is significant, because there is room for improvement in the nation's detection capabilities. For example, "ABC News successfully shipped 15 pounds of depleted uranium into the country two years in a row [2002-2003]" (Ross, 2004). This is significant, because depleted uranium emits a radioactive signature similar to HEU, which was not detected by US Customs upon detection. ABC News used a thin layer of lead to safely transport the depleted uranium and shield it from detection. Almost a decade later, contemporary

detection technologies still struggle to penetrate lead shielding, yet expenditures on the technology remain modest.

In comparison, the US recently committed to spending a projected \$25 billion per year over the next 20 years on maintaining the nuclear triad (Nuclear Threat Initiative, 2013).

The total combined budget for the DNDO and the National Nuclear Security Administration's (NNSA) Counterterrorism and Counterproliferation program—the primary federal agencies tasked with preventing nuclear terrorism—is over \$USD 500 million a year, or one fiftieth of the cost of managing America's thousands of land-, air-, and sea-based nuclear weapons.¹² The public's spending preferences on the issue seem to be elastic, and despite the worst-case scenario threat assessments that dominate mass and elite opinion, there has not been a concerted effort to drastically increase CNT funding. Additional research is required to test whether the perverse electoral incentives inherent to low-probability events have any causal force. Overall, however, it appears that perverse incentives regarding low probability events trump public and elite opinion about the threat of nuclear terror.

¹² For fiscal year 2012, the DNDO requested \$331.7 and the Counterproliferation Program received nearly \$221 million (DHS, 2012; DOE, 2012)

4 Nuclear Terrorism and US International Cooperation

4.1 Overview

Over the last decade the threat of nuclear terrorism has affected the United States' approach to international nuclear cooperation in both bilateral and multilateral forums. This section demonstrates that fact through an examination of two international policy issues: nuclear cooperation agreements and the Nuclear Security Summit process.

First, the G.W. Bush Administration's handling of bilateral nuclear cooperation deals—so called “123 agreements”—is assessed through a comparison of the pacts made with India and the United Arab Emirates (UAE). The cases help illustrate Bush's search for a “gold standard” by which to negotiate future agreements, and the significance of his recognition of “responsible nuclear powers.” These cases also have important implications for Obama's approach to the renegotiation of numerous 123 agreements set to expire next year, and demonstrate that balancing respect for the NPT with the threat posed by nuclear terrorism poses a difficult tradeoff.

Second, President Obama called for a Nuclear Security Summit process with the lofty goal of securing all vulnerable nuclear material within four years. So far its results have been mixed, and its future is in doubt. The two summits in 2010 and 2012 are analyzed in order to advance a discussion of American participation in multilateral arms control processes. G.W. Bush and Obama have taken drastically different approaches to international cooperation on reducing nuclear threats, as the Summit process and the outcomes of the last two NPT Review Conferences clearly show.

4.2 123 Agreements and ENR

Section 123 of the Atomic Energy Act of 1954 governs the conditions for nuclear cooperation with other states, which is why bilateral nuclear cooperation deals are referred to as 123 agreements. This cooperation can take the form of transferring nuclear materials, technologies, and expertise. The US currently has 123 agreements with 22 countries, Taiwan, the European Atomic Energy Community, and the International Atomic Energy Agency. Some of these must be periodically renegotiated, while others—such as the Japan and Euratom deals—are self-renewing (Varnum, 2012). The president exercises more control over 123 agreements than Congress, and the agreements differ from treaties, because they do not need to be ratified by the Senate. “Under the Atomic Energy Act Congress can only prevent entry-into-force of a non-exempt agreement if both houses pass a resolution disapproving it” (Varnum, 2012). Despite a history of executive dominance, Congress has asserted some influence over the process. For instance, the Nuclear Non-Proliferation Act of 1978 established more stringent nonproliferation standards as preconditions for US nuclear cooperation. In the recently concluded 112th Congress, HR 1280 sought to impose more stringent restrictions on 123 agreements, but the bill died after being blocked from floor debate following intense lobbying by the nuclear energy industry (Grossman, 2012).

The crucial issues at stake are Congressional approval of 123 agreements, and enrichment and reprocessing of nuclear material. Enrichment and reprocessing is a complex subject with significant implications for nuclear terrorism. Article IV of the NPT guarantees the “inalienable right of all the Parties to the Treaty to...nuclear energy for peaceful purposes without discrimination,” including, “the fullest possible exchange of equipment, materials

and scientific and technological information” (NPT, Art. IV, sections 1 and 2).

Unencumbered access to the full nuclear fuel cycle includes enrichment and reprocessing capabilities, but these same atomic processes can be used to generate weapons-grade uranium and plutonium. HR 1280 sought to ban America’s nuclear trading partners from developing these capabilities (2012, section 1).

The problems posed by the dual-use applications of enrichment and reprocessing are usually discussed from a nonproliferation perspective. Iran’s enrichment facilities in Natanz and near Qom lack transparency, which certainly contributes to Congressional concerns about enrichment and reprocessing. More broadly, Matthew Fuhrman argues that peaceful nuclear cooperation and the transfer of sensitive nuclear technology increases the likelihood that states will more cheaply and effectively launch nuclear weapons programs (2009). In addition to the proliferation risk, however, the transfer of ENR technology and materials could contribute directly to the threat of nuclear terrorism by increasing the amount of potentially vulnerable nuclear materials. Reprocessing facilitates the separation of plutonium from irradiated fuel, while uranium can be enriched through centrifuge or gaseous diffusion. 123 agreements mandate that all enrichment and reprocessing facilities be placed under international safeguards, but history shows that this is not a foolproof way of rigorously accounting for special nuclear material. In a spirit of international cooperation and technological advancement, President Eisenhower’s “Atoms for Peace” program sent HEU fueled research reactors to over 40 countries. “Although these reactors were covered by “peaceful use” agreements or international safeguards, the United States and Russia came to recognize that widespread use of HEU for research and commercial purposes poses significant risks of

theft and proliferation” (Lyman, 2004). In light of these risks, an examination of the US-India and US-UAE 123 agreements and their ENR clauses is warranted.

4.3 Responsible nuclear powers: the US-India and US-UAE nuclear deals

The US-India and US-UAE 123 agreements were concluded in 2008 and 2009, respectively. The Bush Administration negotiated them both, but the two deals are remarkably different and establish competing precedents. India’s deal granted it full license to develop ENR capabilities, while the UAE deal included a no-enrichment and reprocessing clause. Nonproliferation advocates denounced the agreement with India as soon as it was announced (Huntley, 2008, 2), while there is bipartisan support in Congress for enshrining the UAE deal as a potential “gold standard” for future negotiations (Lewis, 2012).

India is a nuclear weapons state and one of four countries that is not a signatory of the NPT.¹³ It also lacks comprehensive international safeguards on its nuclear facilities, which necessitated an exemption from the Nuclear Suppliers Group’s nonproliferation rules before its 123 agreement with the US could take effect (Varnum, 2012). In accordance with the agreement, India pledged to separate its civilian nuclear program from its military counterpart and to submit the former to international safeguards, while maintaining the latter’s strategic opacity. However, Huntley observes that this is not practically feasible. “India’s nuclear activities cannot be fully separated: access to global uranium reserves for its civilian plants will allow it to utilize its limited domestic uranium supplies to expand its nuclear weapons arsenal more than it otherwise could have” (2008,

¹³ Pakistan, Israel, and North Korea are the other three.

2). This overlap between its civilian and military sectors, combined with the inconsistent application of safeguards, suggests an increase in the production of HEU without full transparency, which increases the potential for diversion or theft by non-state actors.

In this way, the US-India nuclear deal was seen as a blow to the legitimacy of the nuclear nonproliferation regime (Price, 2007, 232). Prior to the agreement, the main prerequisites for nuclear cooperation were NPT membership and compliance with international safeguards. Alternatively, US-India bilateral engagement was justified through a heavy reliance on the concept of a “responsible nuclear power.” This is evident in Indian Prime Minister Singh’s appeal to a Joint Session of Congress the day after he and Bush announced the agreement. He asserted, “India, as a responsible nuclear power, is fully conscious of the immense responsibilities that come with the possession of advanced technologies, both civilian and strategic” (Singh, 2005). In this way, responsibility is substituted for full compliance as the standard for nuclear cooperation. Price argues that the Bush Administration’s recognition of India as a responsible nuclear power was damaging to the nonproliferation regime, because it was part of a strategy to normalize nuclear weapons for ‘responsible’ states (Price, 2007, 239). In turn, this furthers the notion that the nonproliferation regime legitimizes nuclear apartheid between great and lesser powers.

The UAE also seems to qualify for responsible nuclear power status. The Nuclear Threat Initiative’s country profile for the UAE is positively glowing. “The United Arab Emirates (UAE) is a member in good standing of all of the relevant nonproliferation treaties, organizations, and regimes...Currently pursuing a peaceful nuclear program, the UAE is often referred to as a model for nuclear newcomers” (2013a). Indeed, the UAE’s case for

being a responsible nuclear power is more compelling than India's. Despite this deep commitment to nonproliferation and nuclear transparency, the UAE was not granted enrichment and reprocessing capabilities in its nuclear cooperation deal with the US. This was hailed by officials in the Bush Administration as the "gold standard" for new 123 agreements (Lewis, 2012), and it served as the inspiration for the no-enrichment and reprocessing stipulation in HR 1280 (Varnum, 2012).

This raises an intriguing puzzle, and is further indication of a possible disconnect between nuclear risk assessments and policies. India and the UAE are both responsible nuclear powers, they both reside in proliferation-prone regions of geopolitical importance, and they both concluded nuclear deals with the US within a year of each other. Yet, the UAE is a full, abiding member of the nonproliferation treaty regime, but inconsistent with its Article IV NPT rights, it was not granted enrichment and reprocessing capabilities by the US. On the other hand, India is a nuclear-armed country outside the NPT and lacks comprehensive safeguards on its nuclear facilities, but it was given full scope to develop these capabilities with American assistance. What explains this disconnect?

First, the US-India deal was part of a broader effort to deepen relations between the world's two largest democracies. Prime Minister Singh's above-quoted address to the Joint Session of Congress advocated deeper cooperation between the two countries on the issues of trade, energy security, and treatment of HIV and AIDS (2005). Furthermore, bipartisan majorities spanning the 109th and 110th Congresses supported the deal, primarily because it provided US businesses with opportunities that would have otherwise gone to foreign competitors, but also because it helped balance against China

(CQ Almanac, 2008). On the other side, it must be noted that the UAE was not coerced into forsaking enrichment and reprocessing capabilities. Its D.C. Embassy issued a press release the day its 123 agreement went into force. It explained, “[w]e made these commitments to demonstrate our peaceful goals and to remove any ambiguity about our intentions” (2009). The press release also proudly refers to the precedent being set by the “UAE model.” This is especially noteworthy, because by eschewing its “inalienable right” to master the full nuclear fuel cycle, the UAE is reliant on an inchoate global market for supply. The US is still searching for ways to provide cost-effective fuel-cycle services to its partners that give up domestic production, which is complicated by the absence of an internationally controlled fuel bank that could guarantee against supply disruptions (Lewis, 2012). Finally, the UAE’s no-enrichment and reprocessing clause features a conditional out-clause. If another country in the Middle East is granted these privileges in a future 123 agreement, then the UAE can abandon its pledge not to enrich or reprocess. This is crucial, because Saudi Arabia is one of many countries set to negotiate a new nuclear cooperation deal with the US in the next year.

4.4 Off the gold standard: Obama and American nuclear multilateralism

There was hope in Congress and in the nonproliferation community that Obama would adopt the UAE model as his gold standard for the numerous 123 agreements his Administration will negotiate over the next eighteen months. Instead, Obama opted for a case-by-case approach, which Jeffery Lewis notes, is akin to having no standard at all (2012). If the Obama position ever coalesces around a holistic strategy, then it will have to incorporate a number of competing tradeoffs. Denying enrichment and reprocessing

capabilities to nuclear partners is a sound move from a nonproliferation and CNT perspective, but it risks driving prospective trade partners into the arms of alternative nuclear suppliers. Furthermore, no-enrichment and reprocessing clauses constitute yet another challenge to the already beleaguered legitimacy of the NPT regime. Obama's high profile commitment to ensuring that the 2010 NPT Review Conference culminated in the adoption of a consensus document, and his attempts to better fulfill America's disarmament commitments pursuant to Article VI, show that he is committed to the health of the NPT. Obama's case-by-case negotiation of 123 agreements will seek to juggle these competing interests, thereby forestalling the establishment of a clear precedent and extending the debate over how much access to the fuel cycle responsible nuclear powers deserve.

Moving from the bilateral to the multilateral, Obama's Prague speech initiated a Nuclear Security Summit process with the overarching goal of securing all vulnerable nuclear materials by 2014 in order to prevent nuclear terrorism. Obama hosted the first Summit in 2010, South Korea hosted the second Summit in 2012, and The Hague will host the third and (possibly) final Summit in 2014. The Summit process has been applauded for its bringing together over four-dozen heads of government and for securing or eliminating special nuclear material in Mexico, Ukraine, the US, and Russia (Crail, 2012). However, the Summits have been criticized for their non-binding agreements and for their failure to adequately define the words "secure" and "vulnerable" in its foundational pledge (Kim, 2011). Now, the ability of the Summit process to accomplish its goals, and the future of the Summits beyond 2014 is an open question (Davenport, 2011).

While the efficacy of the Summits is of great importance, their very existence is a testament to Obama's commitment to multilateral security arrangements and nuclear cooperation. This signals a rupture from the Bush Administration's predilection for unilateral approaches to security based on its skepticism of multilateral arms control (Miller, 2003). Miller stresses that Bush was not alone in this view. Skepticism of multilateral security arrangements and nuclear arms control "are deeply entrenched in the American political elite and will find visible, influential, effective advocates in the US Congress and in the American public debate no matter who is president" (4). Investigating the tenacity of this view among elites and the mass public after the Iraq War and the successful 2010 NPT Review Conference are tasks for future research.

This case demonstrates that America's threat assessments of a nuclear terrorist attack are somewhat disconnected from its foreign policy decisions on nuclear trade, despite the interconnectedness of the two. The US can avoid accusations of complacency for now, because of its key role in launching the Nuclear Security Summit process. However, in the absence of binding multilateral agreements, the future institutionalization of the Summit process is in serious jeopardy.

5 Conclusion

This thesis finds that the post-9/11 U.S. response to nuclear terrorism has been inconsistent. Examples of a nuclear terrorism disconnect, or inconsistency between threat assessments and policies, abound. U.S. domestic counter nuclear terror (CNT) policies are not in harmony with elite and public threat assessments. Elites believe that a nuclear attack is more likely to be executed by terrorists than a nuclear-armed rival, yet spending priorities are clearly in favor of deterring state actors. The salience of nuclear terrorism is only partially correlated with the threat environment, because risk assessments respond marginally to international developments. International efforts at reducing nuclear terrorism threaten economic goals, and consecutive Presidents have passed the buck on setting important security precedents in relation to nuclear exports.

From a normative democratic standpoint, there is not sufficient reason to believe that elite manipulation of public opinion occurred on this issue. Elites and the public share a heightened concern of nuclear terrorism, but this is not necessarily the result of elite manipulation. However, nuclear politics are still especially susceptible to this danger. There are high levels of general awareness about nuclear issues, but because of its highly technical nature, there are low levels of public knowledge on nuclear issues. This creates opportunities for politicians to employ ideological rhetoric in order to appeal to broad partisan identities and advance nuclear policy goals. Additional research is needed to determine the extent to which this happens in contemporary U.S. politics.

Additional research is needed on a number of issues raised in this thesis. The secondary literature review has been helpful in organizing the field and uncovering inconsistencies in U.S. nuclear terror threat assessments and CNT policies. For instance, new survey data

at both the elite and public levels are necessary to confirm if fear or the availability heuristic have pervasive effects on threat assessments. Furthermore, additional research on the nuclear intentions of non-state actors and probability assessments of nuclear terrorist attacks are needed to settle the emerging disagreement in the nuclear terrorism literature. Finally, this thesis will help inform a dissertation prospectus, which will expand the analysis to the issue areas of nuclear nonproliferation, arms reductions, and energy.

Bibliography

- Almond, Gabriel A. (1960). *The American Public and Foreign Policy*. New York: Praeger.
- Althaus, Scott L. (2003). *Collective Preferences in Democratic Politics*. Cambridge: Cambridge University Press.
- Allison, Graham. *Nuclear Terrorism: The Ultimate Preventable Catastrophe*. New York: Henry Holt and Co., 2004.
- Baum, Matthew A. "Going Private: Public Opinion, Presidential Rhetoric, and the Domestic Politics of Audience Costs in U.S. Foreign Policy Crises." *Journal of Conflict Resolution*, Vol. 48, No. 5, (2004) p. 603-631
- Baumgartner, Frank R. and Bryan D. Jones. (1993). *Agendas and Instability in American Politics*. Chicago: University of Chicago Press.
- Berelson, Bernard R., Paul F. Lazarsfeld, and William N. McPhee (1954). *Voting: A Study of Opinion Formation in a Presidential Campaign*. Chicago: University of Chicago Press.
- Blight, James G. (1992). "Nuclear Crisis Psychologies: Still 'Crazy' (and Still Irrelevant) after All These Years." In *Psychology and Social Policy* (Suedfeld and Tetlock, eds.). New York: Hemisphere Publishing, 1992. Ch. 5, pp. 83-94.
- Broad, William J. (2012). "The Nun who Broke into the Inner Sanctum." *The New York Times*. 10 August. <<http://www.nytimes.com/2012/08/11/science/behind-nuclear-breach-a-nuns-bold-fervor.html>> Accessed: 12 Apr 2013.
- Campbell, Angus, Philip E. Converse, Warren E. Miller, and Donald E. Stokes (1960). *The American Voter*. New York: Wiley.
- Campbell, Colin (2008). "Ideology Meets Reality: Managing Regime Change in Iraq and the Transformation of the Military." From, Campbell et al. *The George W. Bush Legacy*. Washington D.C.: CQ Press. pp. 239-64
- Caspary, William R (1970). "The 'Mood Theory': A Study of Public Opinion and Foreign Policy." *The American Political Science Review*, Vol. 64, No. 2, pp. 536-547.
- Center for Arms Control and Nonproliferation (2000). "National Missile Defense: The Dog that Never Barked." 1 December. <http://armscontrolcenter.org/issues/missiledefense/articles/dog_never_barked> Accessed: 15 April 2013.
- Cohen, Bernard C. (1995). *Democracies and Foreign Policy: Public Participation in the United States and the Netherlands*. Madison: University of Wisconsin Press.

- Cohen, Bernard C. (1973). *The Public's Impact on Foreign Policy*. London: Little, Brown.
- Cole, Benjamin. *The Changing Face of Terrorism: How Real is the Threat from Biological, Chemical and Nuclear Weapons?* New York: I.B. Tauris.
- Converse, Philip E. (1964). "The Nature of Belief Systems in Mass Publics." In *Ideology and Discontent* (David E. Apter, ed.). New York: Free Press.
- Converse, Philip E. (1990). "Popular Representation and the Distribution of Political Information," in *Information and Democratic Processes*, edited by John Ferejohn and James H. Kuklinski. Urbana: University of Illinois Press.
- Crail, Peter (2012). "Nuclear Security Summit at a Glance." *Arms Control Today*. April. <www.armscontrol.org/factsheets/NuclearSecuritySummit> Accessed: 8 April 2013.
- Crenshaw, Martha (2012). "Will Threats Deter Nuclear Terrorism?" from *Deterring Terrorism: Theory and Practice* (eds. Wenger and Wilner). Palo Alto: Stanford Univ. Press, pp. 136-58.
- Davenport, Kelsey (2011). "End of Nuclear Security Summits Mulled." *Arms Control Today*. November. <www.armscontrol.org/act/2011_11/End_of_Nuclear_Security_Summits_Mulled> Accessed: 7 April 2013.
- Dahl, Robert (1985). *Controlling Nuclear Weapons: Democracy Versus Guardianship*. Syracuse: Syracuse Univ. Press.
- Dilanian, Ken (2013). "Cyber-crime tops threats to U.S., intelligence chief says." *Los Angeles Times*, 12 March. <articles.latimes.com/2013/mar/12/news/la-pn-cybercrime-threat-20130312> Accessed: 21 March 2013.
- Drell, Sidney (1983). *Facing the Threat of Nuclear Weapons*, University of Washington Press, Seattle.
- Erikson, Robert S., Michael B. MacKuen, and James A. Stimson (2002). *The Macro Polity*. Cambridge University Press.
- Ferguson, Charles D. and William C. Potter et. al (2004). *The Four Faces of Nuclear Terrorism*. Monterey: Center for Nonproliferation Studies, Monterey Institute for International Studies.
- Fuhrmann, Matthew. (2009). "Spreading Temptation: Proliferation and Peaceful Nuclear Cooperation Agreements." *International Security*, Vol. 34, No. 1, pp. 7-41.

Gavin, Francis J. (2010). "Same As It Ever Was: Nuclear Alarmism, Proliferation, and the Cold War." *International Security*, Vol. 34, No. 3 (Winter 2009/10), pp. 7-37.

Graham, Thomas W. "The Pattern and Importance of Public Knowledge in the Nuclear Era." *Journal of Conflict Resolution*, 32:2 (June 1988): pp. 319-34.

Goodman, David J. (2012). "Microphone Catches a Candid Obama." *New York Times*. 26 March. <nytimes.com/2012/03/27/us/politics/obama-caught-on-microphone-telling-medvedev-of-flexibility.html> Accessed: 10 March 2013.

Grossman, Elaine M. (2012). "House Nuclear Trade Reform Measure on Ice, But Likely Not Gone." *Nuclear Threat Initiative*. <nti.org/gsn/article/house-nuclear-trade-reform-measure-ice-likely-not-gone> Accessed: 10 April 2013.

Herron, Kerry G. and Hank C. Jenkins-Smith. (2009a). "American Views on Nuclear Weapons, Terrorism, Energy, and the Environment: 2009." *Center for Applied Social Research*. Norman: University of Oklahoma.

Herron, Kerry G. and Hank C. Jenkins-Smith. (2006). *Critical Masses and Critical Choices: Evolving Public Opinion on Nuclear Weapons, Terrorism, and Security*. Pittsburgh: University of Pittsburgh Press.

Herron, Kerry G. and Hank C. Jenkins-Smith. (2009b). "Public Perspectives on the Nuclear Future." From the Selected Works of Hank C. Jenkins-Smith. <<http://works.bepress.com/hjsmith/4>> Accessed: 10 March 2013.

Herron, Kerry G. and Hank C. Jenkins-Smith. (2003). "Public Response to Terrorism: Panel Study, 2001-2002." *Center for Applied Social Research*. Norman: University of Oklahoma.

Hinckley, Ronald H. (1992). *People, Polls, and Policymakers: American Public Opinion and National Security*. New York: Lexington Books.

"Hill Backs Nuclear Deal With India." In CQ Almanac 2008, 64th ed., edited by Jan Austin, 6-11-6-12. Washington, DC: Congressional Quarterly, 2009. <library.cqpress.com.ezproxy.library.ubc.ca/cqalmanac/cqal08-1090-52025-2174873> Accessed: 7 April 2013.

Holt, Mark and Anthony Andrews (2012). "Nuclear Power Plant Security and Vulnerabilities." *Congressional Research Service*. 28 August.

Huntley, Wade (2008). "Nuclear Fallout – Implications of the World's Nuclear Deal with India." *Canada Asia Commentary*. No. 53, pp. 1-7.

Jacobs, Lawrence R. and Robert Y. Shapiro (2000). *Politicians Don't Pander: Political Manipulation and the Loss of Democratic Responsiveness*. Chicago: University of Chicago Press.

Jacobson, Gary C (2008). "George W. Bush, Polarization and the War in Iraq." From, Campbell et al. *The George W. Bush Legacy*. Washington D.C.: CQ Press.

Jenkins, Brian Michael (2011). "Have We Succumbed to Nuclear Terror?" In *The Long Shadow of 9/11: America's Response to Terrorism* (Jenkins and Godges, eds.). Santa Monica: RAND Corporation, ch. 2, pp. 87-100

Jenkins, Brian Michael (2012). "The Terrorist Perception of Nuclear Weapons" from *Deterring Terrorism: Theory and Practice* (eds. Wenger and Wilner). Palo Alto: Stanford Univ. Press, pp. 117-35.

Jervis, Robert (1976). *Perception and Misperception in International Politics*. Princeton: Princeton Univ. Press.

Jervis, Robert. "The Political Effects of Nuclear Weapons: A Comment." *International Security*, Vol. 13, No. 2 (Autumn), pp. 80-90

Kaplan, Fred. (1983). *The Wizards of Armageddon*. Palo Alto: Stanford Univ. Press.

Kim, Duyeon (2011). "2012 Nuclear Security Summit: Opportunities and Challenges." *Korea Economic Institute*. September. < www.keia.org/sites/default/files/publications/2012_nuclear_sec_summit_aps.pdf > Accessed: 10 April 2013.

Knopf, Jeffrey W. (1998). *Domestic society and international cooperation: The impact of protest on US arms control policy*. Cambridge: Cambridge Univ. Press.

Levy, Jack S. (1994). "An Introduction to Prospect Theory." From Farnham, Barbara (ed.) *Avoiding Losses/Taking Risks: Prospect Theory and International Conflict*. Ann Arbor: University of Michigan Press. p. 7-22

Lewis, Jeffrey (2012). "It's Not as Easy as 123." *Foreign Policy*. <http://www.foreignpolicy.com/articles/2012/08/01/it_s_not_as_easy_as_1_2_3> Accessed: 12 March 2013.

Lugar, Sen. Richard G (2005). "The Lugar Survey on Proliferation Threats and Responses." Washington, DC: US Senate.

Medalia, Jonathan (2010). "Detection of Nuclear Weapons and Materials: Science, Technologies, Observations." *Congressional Research Service*. < www.fas.org/sgp/crs/nuke/R40154.pdf > Accessed: 8 March 2013.

Miller, Steven E. (2003). "Skepticism Triumphant: the Bush Administration and the Waning of Arms Control." Prepared for *Le Revue Internationale et Strategique*, May 2003. <belfercenter.ksg.harvard.edu/files/miller_paris.pdf> Accessed: 30 September 2009.

Mueller, John (2010). *Atomic Obsession: Nuclear Alarmism from Hiroshima to Al Qaeda*. Oxford Univ. Press.

Mueller, John (2008). "The Atomic Terrorist." Paper prepared for presentation at the Program on International Security Policy, University of Chicago, January 15, 2008.

Mueller, John (1988). "The Essential Irrelevance of Nuclear Weapons: Stability in the Postwar World." *International Security*, Vol. 13, No. 2 (Autumn), pp. 55-79

Nuclear Threat Initiative (2013a). "Country Profile: United Arab Emirates." February. <<http://www.nti.org/country-profiles/united-arab-emirates>> Accessed: 8 April 2013.

Nuclear Threat Initiative (2013b). "US Nuclear Weapons Budget: An Overview." *Center for Nonproliferation Studies*. <www.nti.org/analysis/articles/us-nuclear-weapons-budget-overview/> Accessed: 15 March 2013.

Office of the Press Secretary (2009a). "Remarks by the President at Address to the Nation on the Way Forward in Afghanistan and Pakistan." *The White House*. 5 April. <http://www.whitehouse.gov/the_press_office/Remarks-By-President-Barack-Obama-In-Prague-As-Delivered> Accessed: 10 April 2013.

Office of the Press Secretary (2009b). "Remarks by the President at Hradcany Square (as delivered)." *The White House*. 5 April. <http://www.whitehouse.gov/the_press_office/Remarks-By-President-Barack-Obama-In-Prague-As-Delivered> Accessed: 10 April 2013.

Office of the Press Secretary (2012). "Remarks by the President at the Nunn-Lugar Cooperative Threat Reduction Symposium." *The White House*. Dec. 3. <whitehouse.gov/the-press-office/2012/12/03/remarks-president-nunn-lugar-cooperative-threat-reduction-symposium> Accessed: 15 March 2013.

Page, Benjamin I. and Robert Y. Shapiro (1992). *The Rational Public: Fifty Years of Trends in Americans' Policy Preferences*. Chicago: University of Chicago Press, 1992.

Powlick, Phillip (1995). "The Attitudinal Bases for Responsiveness to Public Opinion among American Foreign Policy Officials." *Journal of Conflict Resolution*, 35 (December). pp. 611-41.

Price, Richard (2007). "Nuclear Weapons Don't Kill People, Rogues Do." *International Politics*, Vol. 44, Issue 2-3 (March/May), pp. 232-249.

- Reuters (2010). "President Obama questions Sarah Palin's nuclear acumen." 8 April. <<http://www.reuters.com/article/2010/04/09/us-obama-palin-idUSTRE63800B20100409>> Accessed: 10 April 2013.
- Ross, Brian (2004). "New Report Reveals Gaps in Port Safety." *ABC News*. 13 Oct. <abcnews.go.com/WNT/story?id=162480#UX9U9Cu4Ebo> Accessed: 17 April 2013.
- Saradzhyan, Simon (2006). "Russia: Grasping the Reality of Nuclear Terror." *Annals of the American Academy of Political and Social Science*, Vol. 607, (Sep.), pp. 64-77.
- Singh, Manmohan. 2005. "PM's Address to Joint Session of the Congress." 19 July 2005. <pmindia.gov.in/speech-details.php?nodeid=145> Accessed: 10 April 2013.
- Stein, Janice G. (1988). "Building politics into psychology: The misperception of threat." *Political Psychology*, 9, 245- 271.
- Stein, Janice G. (2013). "Threat Perception in International Relations." *The Oxford Handbook of Political Psychology*, 2nd ed. (forthcoming). Eds. Huddy, Sears, and Levy. Oxford: Oxford University Press.
- Tannenwald, Nina (2007). *The Nuclear Taboo: The United States and the Non-Use of Nuclear Weapons Since 1945*. Cambridge: Cambridge Univ. Press.
- Tetlock, Phillip E. (2006). *Expert Political Judgment: How Good Is It? How Can We Know?* Princeton Univ. Press.
- "Transcript: First Presidential Debate." *Washington Post*. Coral Gables, FL: September 30, 2004. <http://www.washingtonpost.com/wpshr/politics/debatereferee/debate_0930.html> Accessed: 10 March 2013.
- The Treaty on the Non-Proliferation of Nuclear Weapons (NPT) (1968). United Nations Office for Disarmament Affairs. <<http://www.un.org/disarmament/WMD/Nuclear/NPT.shtml>> Accessed: 10 April 2013.
- HR 1280 (2012) United States. Cong. House. *To amend the Atomic Energy Act of 1954 to require congressional approval of agreements for peaceful nuclear cooperation with foreign countries, and for other purposes*. 112th Cong., 2nd sess. HR 1280. Thomas: Library of Congress. <<http://www.gpo.gov/fdsys/pkg/BILLS-112hr1280rh/pdf/BILLS-112hr1280rh.pdf>> Accessed: 10 April 2013.
- US Dept. of Energy. "FY 2013 Congressional Budget Request." Feb 2012, Vol. 1. <<http://nnsa.energy.gov/sites/default/files/nnsa/02-12-inlinefiles/FY%202013%20Congressional%20Budget%20for%20NNSA.pdf>> Accessed: 15 March 2013.

US Dept. of Homeland Security. "FY 2012 Budget in Brief." *DHS.gov*. Accessed: 10 April 2013.

"US-UAE 123 agreement enters into force." Embassy of the United Arab Emirates. 17 December 2009. < <http://www.uae-embassy.org/media/press-releases/17-Dec-2009>> Accessed: 30 March 2013.

Varnum, Jessica C. (2012). "U.S. Nuclear Cooperation as Nonproliferation: Reforms, or the Devil you Know?" *Nuclear Threat Initiative*. <http://www.nti.org/analysis/articles/us-nuclear-cooperation-nonproliferation-reforms-or-devil-you-know/#_edn6> Accessed: 10 April 2013.

Wittner, Lawrence S. (2010). "The Nuclear Freeze and its Impact." *Arms Control Today*. Vol. 40 (December). < http://www.armscontrol.org/act/2010_12/LookingBack> Accessed: 10 December 2012.

Appendices

Appendix A: Additional Public Opinion Survey Questions

Question 1: "Do you think it is likely that terrorist groups like bin Laden's currently have access to nuclear weapons?"

Yes	63%
No	23%
Not Sure	14%

Source: FOX News/Opinion Dynamics Poll. Nov. 14-15, 2001.

N=900 registered voters nationwide. MoE \pm 3.

Question 2: "Do you think that the United States is adequately prepared for a nuclear, biological, or chemical attack, or not?"

Is	19%
Is not	75%
Unsure	6%

Source: NBC News/Wall Street Journal Poll conducted by the polling organizations of Peter Hart (D) and Bill McInturff (R). Sept. 9-12, 2005. N=500 adults nationwide.

Question 3: "If terrorists use weapons of mass destruction, such as radioactivity or nuclear weapons, would you favor or oppose the U.S. using nuclear weapons in response?"

Favor	59%
Oppose	25%
Not Sure	16%

Source: FOX News/Opinion Dynamics Poll. Oct. 31-Nov. 1, 2001.

N=900 registered voters nationwide. MoE \pm 3.

Question 4: "If the U.S. were attacked by terrorists using nuclear weapons, do you think the United States would be justified or not justified in using nuclear weapons against training camps and other facilities used by the terrorists that the U.S. believes were responsible for the attack?"

Justified	67%
Not Justified	30%
Not Sure	3%

Source: CNN/USA Today/Gallup Poll. March 22-24, 2002. Nationwide. (N=510, MoE \pm 5)

Question 5: "If the U.S. were attacked by terrorists using nuclear weapons, do you think the United States would be justified or not justified in using nuclear weapons against major cities in countries that harbor the terrorists the U.S. believes were responsible for the attack?"

Justified	57%
Not Justified	40%
Not Sure	3%

Source: CNN/USA Today/Gallup Poll. March 22-24, 2002. Nationwide. (N=510, MoE \pm 5)

Question 6: "If there were to be a nuclear emergency in New York state today, do you think it is more likely to be the result of a terror attack or an accident at a nuclear power plant?"

Terror attack	38%
Accident at nuclear power plant	52%
Unsure	10%

Source: Universe. Aug. 16, 2011. State: New York; Method: telephone; Sample size: 600

Appendix B: Congressionally Funded Detection Technologies¹⁴

Detection Technology	Status	Cost (per annum, unless otherwise stated, in \$USD)
Nanocomposite Scintillators	Project terminated in January 2010.	\$5.5 million
GADRAS: A Gamma-Ray Spectrum Analysis Application Using Multiple Algorithms	“GADRAS has been used for cargo inspection since 1998. Software upgrades are released every two months or so” (22).	There is no line item for GADRAS development. Sandia National Laboratories is estimated to have spent about \$600,000 in FY2010
Computer Modeling to Evaluate Detection Capability	“DNDO has established an ongoing program, Detection Modeling and Operational Analysis (DMOA), which is carried out by the national laboratories and private sector contractors. When DNDO was established, DMOA became an explicit element within the System Architecture program. DOE and DOD do other types of detection modeling for other purposes” (27).	Approximately \$2 million per year for the system architecture program. The amount funded by all DNDO offices on related detection modeling is about \$10 million. However, since modeling activities are inherently cross-cutting and support many technology development and assessment projects, it is difficult to estimate total spending on modeling in the federal budget.
L-3 CAARS: A Low-Risk Dual-Energy Radiography System	The CAARS program ended in FY2009, to be replaced by a follow-on DNDO-Customs and Border Protection program “to advance CAARS technology so that it can be deployed in the field” (39).	From FY2006-FY2010, the average annual budget was \$26.2 million.
SAIC CAARS: A Higher-Risk, Higher-Benefit Dual-Energy Radiography System	As of April 2010, Science Applications International Corporation (SAIC) “disassembled its CAARS test unit and was disposing of the government-owned material under DNDO supervision... Meanwhile, SAIC was adapting its technology to a truck-mounted design” (47).	\$4-\$7 million per unit.

¹⁴ All information and quotations from Medalia, 2010, pp. 13-83.

Detection Technology	Status	Cost (per annum, unless otherwise stated, in \$USD)
AS&E CAARS: Using Backscattered X-Rays to Detect Dense Material	“On March 10, 2009, DNDO terminated the contract with American Science and Engineering, Inc. (AS&E) to continue developing this system. ⁷⁹ DNDO views the technology incorporated in this system as holding some promise, but states that development of this technology requires additional basic research” (49).	\$8-\$10 million per unit.
Muon Tomography (MT)	Decision Sciences International Corporation (DSIC) and Los Alamos National Laboratory collaborated on a prototype from October 2008 to June 2009. As of April 2010, DSIC hoped to make their MT scanners commercially available by 2012. Medalia harbored misgivings about the accuracy of that timetable (68).	The unit price is unclear, though it appears to be in the neighborhood of \$8 million (64).
Scanning Cargo or Analyzing a Terrorist Nuclear Weapon with Nuclear Resonance Fluorescence	From 2004 to 2010, Passport Systems has been awarded contracts by DHS Homeland Security Advanced Research Projects Agency and DNDO.	Passport Systems’ several contracts with DHS agencies total \$17.7. The unit price is \$5 to \$10 million “depending on system configuration” (74).
Detecting Special Nuclear Material at a Distance	The DOD’s Defense Threat Reduction Agency (DTRA) “is sponsoring several remote-detection systems.” The Photonuclear Inspection and Threat Assessment System (PITAS), conducted by the Idaho National Laboratory (INL) is the closest to deployment (79).	Funding levels for experiments with PITAS are not publicly releasable (81), though in April 2010, “DNDO awarded Raytheon a contract for \$20.5 million for R&D” on an Integrated Standoff Inspection System (ISIS).