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How Perceived Madness Lets Leaders Capture the Benefits of Nuclear Superiority

BENJAMIN M. BRAUSER  
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Reviewed and approved\* by the following:

Roseanne McManus  
Associate Professor of Political Science and International Affairs  
Thesis Supervisor

Michael Berkman  
Professor of Political Science  
Honors Adviser

\* Electronic approvals are on file.

## ABSTRACT

The 'Commitment Problem' is a situation in which national leaders cannot achieve their goals due to their inability to make credible threats. It is prominent within the study of nuclear weapons and crisis negotiations because it is challenging to convince a state that their adversary would be willing to utilize a nuclear weapon to achieve its goals. The non-retaliatory use of nuclear weapons is almost certain to be met with immense consequences. Leaders who seek to make nuclear threats must find ways to overcome the commitment problem and demonstrate their willingness to follow through on threats. This thesis investigates one such strategy by evaluating how leaders' reputations for irrational behavior affect their success in nuclear threat-making. The study tests the interaction between nuclear superiority and madness reputation on the likelihood of threat reciprocation to determine whether leaders with a high madness reputation are able to overcome the commitment problem with more success than leaders without low madness reputations. The author finds that leaders who possess both nuclear superiority and have high madness reputations are most successful when making compelling threats and that among leaders with nuclear supremacy, higher levels of madness are correlated with lower chances of threat reciprocation (higher chances of success).

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## **Chapter 1**

### **Introduction**

The advent of nuclear weapons in 1945 and their subsequent proliferation irrevocably transformed international crisis negotiations. This proliferation dramatically increased the potential cost of conflicts involving nuclear-armed powers, reshaping the way both scholars and politicians approach international conflict resolution. With the cost of conflict elevated to nearly maximal levels, direct military conflicts between nuclear-armed states have become exceedingly rare. Direct conflicts have been replaced by nuclear crises: competitions between two or more states in which both parties attempt to achieve their objectives through risk-taking behavior that increases the likelihood of nuclear war. The goal of these escalations is to force one state to capitulate once they reach a risk threshold that they are unwilling to sustain (Powell, 1990). There have been several notable instances of nuclear crisis since the advent of nuclear weapons, including the Berlin Crisis and Cuban Missile Crisis. Both events were marked by escalatory standoffs between the nuclear-armed United States and the Soviet Union during the Cold War. In each instance, both sides took steps that heightened the possibility of nuclear conflict until one side offered concessions. Even in recent years, nuclear crises have been a central point of international disputes. In 2017, President Donald Trump was engaged in a dispute with North Korea's leader, Kim Jung Un, which led then-President Trump to threaten the Democratic People's Republic of North Korea (DPRK) with "Fire and fury like the world has never seen." North Korea responded by threatening to test nuclear weapons within a hazardous distance from Guam (Baker & Sang-Hun, 2017). The prevalence of such crises begs an important question: does the possession and subsequent threat of nuclear weapons enable states to achieve better

bargaining and crisis outcomes? Further, can a leader's reputation help or hinder their ability to successfully use the threat of nuclear utilization? Understanding the answer is essential for conflict resolution in a world populated by nuclear armed states.

I evaluate both of these questions to determine whether cultivating a reputation for madness is beneficial or harmful for leaders who have nuclear superiority in an interstate dispute. High reputations for madness should enable leaders to make more believable claims that they would be willing to follow through on a nuclear threat, allowing such leaders to be more successful when making compellent threats compared to their sane counterparts. Leaders with high madness reputations are able to make more credible threats because they are less tethered by consequence-based decision-making. If a leader is believed to be mad, then they will not be expected to make rational decisions dictated by the consequences of their actions and will be more likely to take extreme risks to achieve their goals. My analysis seeks to verify this prediction and ultimately concludes that leaders with nuclear superiority and high madness reputations are most successful at making compellent threats in interstate disputes.

I begin with an exploration of existing research into the effect that possessing nuclear weapons has on crisis negotiations before moving into a discussion on existing research into the madman theory. My paper bridges these two concepts by analyzing the interactive effect between madness reputation and nuclear superiority to determine whether these factors together reduce the likelihood of reciprocation in interstate disputes. Unreciprocated threats are successful because they achieve their goals without any retaliatory actions by the threatened state. Evaluating the joint effect of madness reputation and nuclear superiority shows that leaders with a high reputation for madness who possess nuclear superiority are least likely to have their



threats reciprocated, making them the most successful leaders when making compelling threats.

Therefore, the empirical analysis supports my theory.

## **Chapter 2**

### **Literature Review: Nuclear Weapons as Tools of Coercion**

Nuclear weapons are primarily tools of deterrence (the ability of one state to dissuade another state from taking a particular action). Deterrence focuses on preventative diplomacy. In contrast, compellence is the ability of one state to persuade another to take a particular action (typically by threat or force). Unlike deterrence, compellence encourages action rather than discouraging action. Both deterrence and compellence are forms of coercion just with different focuses. Coercion is an umbrella term which includes all efforts to force or prevent an action through force or threats. Theorists have broadly embraced the idea that the possession of nuclear weapons increases a country's deterrence but are split over whether the possession of nuclear weapons has an impact in non-defensive coercion where the nuclear state's vital interests are not at stake. This stems from an international norm that the first-strike usage of nuclear weapons is unacceptable while utilizing nuclear weapons in defense of vital security interests or in retaliation against a nuclear attack is more justifiable.

Waltz is among the biggest proponents of the idea that nuclear weapons are useful for deterrence, yet he remains skeptical of their utility for compellence (Waltz, Chapter 1, 2012). He views deterrence as dependent on the ability to punish adversaries rather than the ability to defend against attacks. States are more easily dissuaded when they fear repercussions than when they merely believe an attack will be difficult to execute effectively. In this way, nuclear weapons are the ultimate deterrent force as they enable states to threaten massive punishment in the event of an attack. He suggests that the proliferation of nuclear weapons increases certainty about relative strength between adversaries which reduces the likelihood of war altogether. He argues that war

occurs when states have uncertainty or misconceptions about their relative strengths and initiate a conflict because they believe they are stronger than their adversary is treating them in negotiations. Nuclear weapons largely resolve this uncertainty by enabling states to credibly threaten overwhelming retaliation. In summary, he argues that “in a nuclear world, only limited wars can be fought” (Waltz, 2012, pg. 36).

Waltz’s argument exemplifies the theory of the “nuclear revolution.” The nuclear revolution suggests that the advent and proliferation of nuclear weapons has ushered in an era where war between nuclear states is extremely unlikely, and most conflicts have become relegated to proxy wars or cold wars. Waltz argues that states have a much stronger will to use nuclear weapons when they are the defenders in a conflict, while challenger states are far less likely to use nuclear weapons. This contributes to a geopolitical atmosphere in which nuclear states have strong deterrent capabilities stemming from nuclear weapons but have limited additional compellent force.

The significance of nuclear weapons’ ability to produce a deterrent threat is broadly accepted, but there continues to be debate about whether such weapons benefit compellence. There is an abundance of historical conflicts between nuclear and non-nuclear states where the possession of nuclear weapons failed to coerce non-nuclear powers into making concessions. Sechser and Fuhrmann (2013, 2017) highlight these failures as flaws in the argument of coercionist thinkers. They believe that the utility of nuclear weapons as compellent tools is greatly exaggerated as the costs of utilizing nuclear weapons are far greater than the coercionist school maintains. Sechser and Fuhrmann note that “While nuclear weapons may carry coercive weight as instruments of deterrence, it appears that these effects do not extend to compellence,” (Sechser & Fuhrmann, 2013, p.173). In many instances, a country can achieve its aims with

conventional forces rather than nuclear ones and would face fewer repercussions in the former case. Furthermore, an effective compellent threat to use nuclear weapons requires the target to believe that their advisory is desperate enough to resort to launching a nuclear attack. Given that a state making demands presumably is already living without those concessions, it is difficult for them to credibly convey their willingness to resort to nuclear weapons in order to achieve their goals (Sechser & Fuhrmann, 2017). Despite these limitations, Sechser and Fuhrmann do not entirely dismiss the potential for nuclear weapons to have compellent benefits under the right conditions. They recognize that certain situational attributes may create conditions for nuclear weapons to provide coercive utility in compellence. I explore this further below, as my theory specifically claims that high reputations for madness create the conditions in which nuclear weapons provide coercive utility.

A scholar who is more optimistic about the benefits of nuclear weapons for compellence is Schelling (1966). Schelling points out that the power of nuclear weapons in diplomacy does not hinge exclusively on the credibility of verbal threats. Rather, states can raise the risk of nuclear war without directly threatening to initiate it. While states face significant credibility challenges to the threat of using nuclear weapons outright, they can more credibly threaten to take actions that increase the risk of miscalculation or escalation toward nuclear conflict. This critical distinction helps justify the potential for nuclear weapons to have compellent benefits even if states cannot credibly directly threaten to use them. Merely taking escalatory steps can generate compellent pressure. Schelling argues that nuclear crises are often won by the side that can most convincingly demonstrate its credibility and resolve through risk-taking. This claim suggests that appearing irrational or mad may be beneficial to winning a nuclear crisis if it increases the credibility of nuclear threats and risk escalation.

In Schelling's view, nuclear weapons pose such a fundamental threat to civilizations that there is no conceivable defense to total nuclear war (Schelling, 1966). Consequentially, even a minor risk of nuclear conflict creates immense compellent weight. While historical powers may have possessed a similar capability to eliminate their rivals, nuclear weapons present a far more efficient means of destruction. Schelling doesn't go so far as to claim that these assertions make conventional military power entirely obsolete, but he does suggest that the importance of capability alone was diminished in favor of greater emphasis on credibility. He holds that the consequences of nuclear war are so great that any increase in the risk of conflict would be cause for concern in a crisis involving a nuclear-armed state. The strategic manipulation of this risk to attain compellent benefit is known as brinkmanship (Schelling, 1966).

Scholars therefore offer different theoretical arguments about the utility of nuclear weapons for compellence. With this theoretical foundation established, we can consider the empirical evidence regarding nuclear compellence beginning with the emergence of nuclear weapons at the end of World War II.

### **Sub-Chapter 2.1 Existing Empirical Evidence**

The nuclear strikes on Hiroshima and Nagasaki mark the first and only use of nuclear weapons by one state against another. Wilson suggests that the effect of those strikes on the outcome of World War II has informed nearly all subsequent thinking on nuclear weapons (Wilson, 2007). Early Nuclear theorists considered the nuclear strikes on Japan to be an example of successful coercion, as the United States was able to solicit a Japanese surrender shortly after the attacks. Wilson challenges that conventional approach, arguing that the use of nuclear weapons against Hiroshima and Nagasaki had little to no impact on Japan's willingness to surrender. Noting that nearly a third of U.S. bombing campaigns against Japanese cities resulted in more damage than the nuclear blasts, Wilson suggests that the true catalyst for Japan's surrender was the Soviet invasion of Manchuria. The nuclear attacks did not dramatically differ from conventional bombing campaigns; rather, they coincided with the Soviet Union's invasion of Japanese territory, making the fall of Japan virtually inevitable. From this evidence, he concludes that the ability of nuclear weapons to end conflicts or achieve bargaining outcomes is not significantly greater than that of other conventional military forces (Wilson, 2007). This example is uniquely relevant, as it is the only instance in which a nuclear state had absolute credibility in its nuclear threats. The United States demonstrated its willingness to use nuclear weapons, and Wilson argues that this was still insufficient to trigger Japanese concessions.

As noted above, Sechser and Fuhrmann (2013, 2017) are also skeptical about the utility of nuclear weapons for compellence. They supplement their theoretical arguments with a quantitative analysis of 210 compellent threats (demands accompanied by threats of military force) made between nuclear and non-nuclear powers and conclude that the possession of

nuclear weapons does not benefit a country in crisis negotiations. They also find little evidence that nuclear weapons benefit compellence in qualitative analysis of cases. For example, the Soviets failed to leverage their nuclear arsenal as a compellent tool in territorial disputes with China in the 1960s, the United States failed to coerce Afghanistan following the 9/11 attacks, and Britain failed to force Argentina out of the Falkland Islands until they used conventional force (Sechser & Fuhrmann, 2017).

Research on the effect of nuclear latency adds to this skepticism. Nuclear latency describes states that have the capabilities to construct nuclear weapons but do not actually possess them. If nuclear weapons do provide benefits for compellence, we might also expect nuclear latency to have a similar effect. Mehta and Whitlark tackle this question by analyzing the treatment of countries that develop enrichment and reprocessing (ENR) facilities to develop latent nuclear capabilities. They find that the operation of ENR facilities neither lends compellent or deterrent benefit but rather proves harmful as states become more likely to receive nonproliferation sanctions and reduced economic assistance (Mehta & Whitlark, 2017).

On the other hand, many scholars of international relations have continued to argue that nuclear weapons elevate the bargaining power of a state engaged in interstate conflict. Those who do find a helpful effect of nuclear weapons tend to find that it applies mostly in the case of nuclear superiority. After reviewing directed crisis dyads from 1945 to 2002, Beardseley and Asal find that the possession of nuclear weapons both increases the likelihood of success for nuclear states and shortens the length of crises between nuclear and non-nuclear states. This effect is negated when both states possess nuclear weapons (Beardseley & Asal, 2009). These findings directly contradict Sechser and Fuhrmann's conclusion, demonstrating the continued debate over nuclear weapons' impact on coercive diplomacy.

Other scholars consider not just whether states have nuclear weapons but also take into account which countries have comparatively more nuclear weapons. Kroenig argues that while nuclear crises are competitions in risk-taking, “nuclear superiority... increases the level of risk that a state is willing to run in a crisis,” (Kroenig, 2013). He expanded upon earlier brinksmanship theories by directly incorporating the balance of nuclear power into deterrence models. His quantitative analysis of nuclear crises concluded that a state is more likely to achieve its goals in a nuclear crisis if it has a larger nuclear arsenal than its rival. On the other hand, Fanlo and Sukin (2021) contest Kroenig’s conclusion, suggesting instead that there is no advantage to possessing nuclear weapons in a crisis with asymmetric nuclear power balances. Fanlo and Sukin believe that a vastly inferior state will only participate in a crisis with another superior state if they believe that the costs of capitulation are unbearable. Otherwise, such a state would have already offered concessions to avoid a nuclear crisis with a clearly superior state (Fanlo & Sukin, 2021). This self-selection of cases means that superior states attempting compellence in crisis bargaining will face highly resolved targets that are unlikely to give in.

Taken together, it is clear that the coercive benefit of nuclear weapons for compellence is not universally evident. To the extent that findings support a beneficial effect of nuclear weapons on compellence, it seems to primarily be present when a country has nuclear superiority – either in terms of having nuclear weapons while its adversary does not (Beardseley & Asal, 2009) or in terms of having more nuclear weapons than its adversary (Kroenig 2013). However, not all research supports the idea that nuclear weapons aid compellence even with superiority. Some contingent factors must play a role in determining the utility of nuclear weapons in crisis negotiations. To fully understand how and when the possession of nuclear weapons improves



crisis outcomes, we must identify the factors that cause variation in the success of bargaining between nuclear and non-nuclear states. I theorize that perceptions of madness play a key role.

## Chapter 3

### How Perceived Madness Helps

It is challenging to imagine a sane leader following through on extreme threats, particularly those involving nuclear weapons. Consequentially, leaders considered to be sane or rational struggle to make credible threats involving nuclear weapons in coercive bargaining. Leaders have an incentive to portray themselves as mad in order to make threats involving the use of nuclear weapons more convincing because it reduces the limitations that sanity imposes on their perceived willingness to use such weapons. As Schelling notes, it is self-evident “that it is not a universal advantage in situations of conflict to be inalienably and manifestly rational in decision and motivation,” (Schelling, 1980, pg.18). This strategy of strategically appearing irrational was coined the “Madman Theory” by Richard Nixon to describe his own approach to negotiating with the North Vietnamese during the Vietnam War (Haldeman & DiMona, 1978, pg. 83). I suggest that a leader’s perceived madness influences their ability to successfully make coercive demands involving nuclear weapons. A leader with nuclear superiority will be more successful at compellence when they are perceived as mad because they possess both the capabilities and perceived credibility to follow through on a nuclear threat. To evaluate that claim, it is essential to have a clear definition of madness.

Rather than attempting to determine if a leader is truly mad or insane, it is more valuable to evaluate how leaders are perceived. It is the perception of madness, not its actual presence, that influences the credibility of threats. Ellsberg offers an early framework for defining madness, based upon the actions of Hitler during the buildup to World War II, that emphasizes unpredictability and extreme payoffs (Ellsberg, 1959, pg. 24). These two types of madness

separate leaders who act erratically from those who act predictably but act towards extreme objectives. This theory is expanded upon by McManus, who further divides madness into four distinct types. On one dimension, leaders are divided between those with extreme preferences and those who have abandoned logical decision-making (McManus, 2019, pg.4). The other dimension distinguishes between situational and dispositional madness to separate leaders who only appear mad during a particular crisis from leaders who have a reputation for being mad all of the time. Measuring madness along the first dimension is far more challenging than the second, as we can directly observe the frequency with which leaders are described as mad, but we cannot directly ascertain the underlying motivation behind their madness (extreme preferences or deviation from consequence-based decision-making). Since all types of madness are predicted to increase credibility, it is sufficient for this paper to simply divide leaders into those who are perceived to be mad and those who are not. Future research may find it valuable to further delineate between different types of madness; however, I am primarily interested in the overall effect of all types of madness that can be captured with an overarching madness classification.

Current insight into the potential effect of madness on compellence and crisis bargaining is mixed. Leaders who are thought to be mad might suffer greater negotiating disadvantages from the commitment problem than their sane counterparts. If a leader is thought to be unpredictable or to have extreme aims, they may be less willing to maintain agreements made during a negotiation after the fact (McManus, 2019, pg. 12). This might make other leaders reluctant to reach agreements with them. McManus (2021) further determines that the effect of madness is generally harmful to leaders' negotiation strength with the caveat that relatively weak leaders who are perceived as slightly mad have an advantage. This aligns with the commitment

problem, as weaker leaders can more credibly commit to peace following the conclusion of a conflict. Despite these findings, I expect that the drawbacks of the commitment problem may play a lesser role in nuclear crises because the stakes are so high. Concerns about future credibility may play a smaller roll in such high-risk crises. Moreover, Schwartz (2023, pg. 5) finds in survey experiments that despite the countervailing effects of a heightened commitment problem, leaders who are perceived as mad are able to make more effective threats than their sane counterparts.

Previous research into the madman theory has focused on how the perception of leaders affects their negotiating strength in conflicts generally. Most of this research does not focus specifically on nuclear coercion, nor does it consider how perceived madness interacts with nuclear superiority. Discerning the effect of madness in conflicts where the mad leader's state has nuclear superiority will fill this gap in research and provide valuable insights into how the dynamics of the madman theory change in states with nuclear capability.

I theorize that higher reputations for madness will enable leaders to more credibly claim that they would be willing to follow through on a nuclear threat, enabling those leaders to have more success in making compellent threats than their sane counterparts. States with nuclear superiority already have a demonstrated capability to utilize nuclear weapons, but they must demonstrate willingness to use those weapons. The primary challenge to successful nuclear compellence is resolving the credibility problem: would a sane leader actually be willing to utilize nuclear weapons when they know that the costs likely outweigh the benefits? Having a high madness reputation resolves this challenge by sidestepping the question entirely. Leaders with a high madness reputation are thought to have either deviated from consequence-based decision-making or to have such extreme preferences that they would be willing to risk higher

costs than a sane leader. In either scenario, I would expect that having a high reputation for madness would partially resolve the credibility problem, enabling leaders perceived as mad to benefit from nuclear superiority more than their sane counterparts. From this, I establish hypothesis 1:

*H1: Nuclear superiority will be more beneficial to leaders attempting compellence when the leader is perceived as having a high madness reputation.*

The combination of nuclear superiority with madness should enable leaders to have the most success in compellent threat making. Among leaders with a low madness reputation, the benefit of having nuclear superiority is likely negligible as they will be unable to overcome the credibility challenge. Effectively, without being able to demonstrate resolve, such states will gain no advantage from having nuclear superiority. Similarly, among states with nuclear inferiority, there will likely be no benefit to having a high madness reputation as these states do not have the capability to follow through on their threats. Only states that have both nuclear superiority and leaders with a high madness reputation will be able to engage most successfully in compellent threat making. Thus, I conclude hypothesis 2:

*H2: Leaders with both nuclear superiority and a reputation for madness will be more successful than other leaders at compellence.*

## **Chapter 4**

### **Research Design**

I test my hypotheses using dyadic militarized interstate disputes (MIDs) as my unit of analysis. Each dyad includes two countries engaged in a dispute, with country A being the instigator and country B being the target. This unit of measurement captures all cases where a state either threatened, showed, or used force against another state between 1986 and 2010, during which 931 dyadic MIDs occurred. This method varies from the approach adopted by some previous scholars, including Kroenig (2013) and Beardsley and Asal (2009), who used the International Crisis Behavior (ICB) project's list of international crises as a sample population. It also differs from Sechser and Fuhrman (2013, 2017), who use a dataset of militarized compellent threats.

My reason for evaluating MIDs as opposed to ICB crisis incidents is twofold. First, the ICB's crisis database provides insufficient data to conduct a thorough statistical analysis given the other essential variables I rely upon. There are not enough events classified as crises involving leaders with high madness reputations to draw substantial conclusions from. The second reason is more theoretical. The ICB classifies an event as a crisis if one state's values are threatened, there is a heightened probability of military escalation, and there is a finite time frame to resolve the crisis (Brecher & Wikenfeld, 2000). Under this definition, there is ambiguity about both whether a state's values are threatened and whether there is an increased probability of military escalation. It is challenging to definitively determine if there is a probability for escalation in instances where escalation did not ultimately occur. Another popular approach is to use the Militarized Compellent Threats index developed by Sechser (2011); however, the MCT

index only compiles data from 1918-2001. This has insufficient overlap with the madness index I rely upon, making it unfeasible to use as a measurement metric.

Using MIDs as my unit of analysis ensures that all included disputes involve direct threats, shows, or uses of force. I use dyadic MIDs to account for the variation in outcomes between the various states involved in multilateral MIDs. Country A in each dyad is the dyadic MID initiator, whereas country B is the target.

To determine whether or not country A was successful at compellence in a given MID, I use the binary dependent variable *reciprocation* to measure if country B stands down or reciprocates country A's threat, show, or use of force. This variable is coded 1 if country B reciprocates with its own threat, show, or use of force and coded 0 otherwise. Reciprocation is an appropriate measurement of success as it effectively represents the reaction of country B. In a dispute, if country B decides not to respond to the threat, show, or use of force made by country A, it can be inferred that country B has capitulated or conceded in the given crisis. If country B responds to the dispute with its own show or threat of force, then we can conclude that they were not coerced by the actions of country A and have not conceded. Coercive bargaining is successful for country A whenever they can make a threat or use of force without it being reciprocated by country B. Therefore, measuring reciprocation as the dependent variable is an effective proxy for determining coercive bargaining success. In using this variable, I follow other scholars who have used it to measure compellence success, starting with Schultz (1999). Because my dependent variable is binary, I estimate a logit model.

The two primary independent variables that I rely upon are a binary measurement of nuclear superiority and a continuous crazy score developed by McManus (2021). I code both of these variables for country A, the initiator. Country A is considered to have nuclear superiority

(i.e., superiority equals 1) if two conditions are met: (1) country A has nuclear weapons, and (2) country B does not. In all other instances, country A is not coded as having nuclear superiority (i.e., superiority equals 0). The countries that have nuclear weapons in the years that my analysis covers are the United States, Russia (formerly the Soviet Union), the United Kingdom, France, China, India, Israel, Pakistan (after May 28<sup>th</sup>, 1998), North Korea (after October 9<sup>th</sup>, 2006), and South Africa (until October 1<sup>st</sup>, 1991). My analysis spans from 1986 to 2010 and relies upon the Encyclopedia Britannica to determine the exact dates of nuclear possession and disarmament. I chose to measure nuclear superiority in absolute terms rather than on a continuous spectrum due to the limited sample of MIDs involving nuclear imbalances. There are insufficient examples of MIDs in which both states possess varying degrees of nuclear capability to draw meaningful conclusions from the data.

I code the perceived madness of country A's leader using the continuous madness reputation measurement developed by McManus (2021). This measure scores leaders' perceived madness based on references to the leader as crazy, insane, or irrational across a variety of publications and news outlets. Higher scores indicate a greater madness reputation. McManus shows that this measure has face validity and performs as expected in statistical regressions. I interact the nuclear superiority indicator and the continuous madness reputation measure together in my model to measure their joint effect.

I selected five control variables to account for a variety of additional factors that may influence the likelihood of reciprocation. The first two are dummy variables to indicate whether country A and country B are democracies. This is measured based on the Polity dataset (Marshall, Jaggers, and Gurr 2010). Independent of each other, both may impact the likelihood of reciprocation. If country A is a democracy, its threats may be taken more seriously as



democratic leaders have an electoral incentive to cultivate a reputation for being true to their threats. If country B is a democracy, they may have an electoral incentive to reciprocate aggression to avoid appearing weak resulting in electoral backlash. The next two variables both focus on the distance between states involved in a MID. I use a binary variable to measure whether the two countries share a contiguous land border to account for the increased ease of reciprocation between states that directly border each other (Stinnett et al. 2002). Bordering states may feel greater pressure to reciprocate to deter further direct action that threatens their territory. Another variable is used to measure the distance between states to similarly account for the varying ability of states to reciprocate based on the distance between their territories (Bennett and Stam 2000). Closer states will naturally have a greater ability to retaliate as retaliating against a nation that is further away requires greater levels of logistical capabilities. A final control variable measures the percentage of conventional military capabilities in the dispute held by country A. This is measured using the relative Composite Index of National Capability (CINC) scores for country A and country B (Singer, Bremer and Stuckey 1972). Conventional capabilities likely play a large role in coercive bargaining and could complicate efforts to measure the effects of nuclear superiority and madness reputation alone. This control variable ensures that the relative conventional capability of the two states is accounted for.

## Chapter 5

### Main Results

The main regression results are displayed below in Table 1. The coefficients of the first two variables (nuclear superiority and madness reputation for country A) cannot be meaningfully interpreted independently as they are both included in an interactive term. The interactive term including both nuclear superiority and madness reputation is not significant. However, this in itself is insufficient to conclude that the hypotheses are unsupported because it is also important to consider the substantive effects (Brambor, Clark, and Golder 2006, 74). I conducted a marginal effects analysis and predicted probability analysis which both resulted in significant results to provide a reliable interpretation of the interactive variable (Figures 1 & 2). Before turning to this, I will discuss the control variables. Among the control variables, there are two with statistical significance. When country A is a democracy, there is a significant and negative effect on reciprocation. It is likely that when a democracy makes threats, they are seen as more credible than non-democracies as democratic leaders have an electoral incentive to follow through with their threats to avoid appearing weak. The other significant variable was whether or not states share a land border. A shared land border between countries A and B has a significant and positive effect on the probability of reciprocation. This is logical as it is far easier for a country to reciprocate military actions made by a state that it shares a border with. Furthermore, it is more critical for a state to respond to threats from neighboring states to deter further crises. Whether or not country B was a democracy did not have a significant effect on reciprocation. This indicates that being a democracy does not make a state any more or less likely to respond to a crisis. Distance between states did not have a significant effect beyond the effect already

captured within the land border variable. Interestingly, the share of conventional military power held by state A also had an insignificant effect on reciprocation, indicating that conventional forces may not be a major factor in determining the likelihood of reciprocation.

Table 1. Determinants of Reciprocation

	(1)
	Reciprocation
Nuclear Superiority, A	0.021 (0.131)
Continuous Madness Reputation, A	0.293** (0.135)
Nuclear Superiority, <u>A</u> # Continuous Madness Reputation, A	-0.899 (0.624)
Democracy, A	-0.284*** (0.100)
Democracy, B	-0.0004 (0.096)
Land Border	0.383*** (0.111)
Distance	0.023 (0.029)
% Military capabilities, A	-0.116 (0.169)
Constant	-0.269* (0.146)
Observations	831

This is a logit model. Standard errors in parentheses.

\*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$

Figure 1 visualizes the marginal effect that being the sole nuclear power in a crisis has for leaders with varying levels of perceived madness. This figure allows me to evaluate Hypothesis 1 by determining whether nuclear superiority is more beneficial for leaders attempting compellence when they have a greater madness reputation. Among leaders with a low madness score, there is a near 0 effect of nuclear superiority on the likelihood of reciprocation. Additionally, the effect of nuclear superiority is statistically insignificant at this level because the confidence bound crosses over 0 on the y axis. This indicates that having nuclear superiority in a crisis is not valuable for leaders with a low madness reputation. As leaders' madness reputations increase, I observe that having nuclear superiority has an increasingly negative effect on the probability of reciprocation, meaning that leaders experience greater success at compellence. Importantly, the confidence intervals also drop below 0 and become statistically significant for all madness scores of 1.5 and higher. As a leader's madness reputation increases, the effect that having nuclear superiority has on reciprocation moves from being insignificant to being statistically significant. This means that nuclear superiority is substantially more beneficial for leaders with a high madness reputation than for leaders with a low madness reputation. It also means that the effect of high madness reputations on compellent success is more reliable than the effect of low madness reputations. The effect of nuclear superiority on compellent success increases as madness reputation increases. These statistically significant findings confirm Hypothesis 1 by demonstrating that the probability of reciprocation declines when leaders with nuclear superiority have a higher madness reputation. A lower probability of reciprocation equates to more success in making compellent threats for leaders with nuclear superiority and a high madness reputation.

**Figure 1. Marginal Effect of Nuclear Superiority by Continuous Madness Measurement**

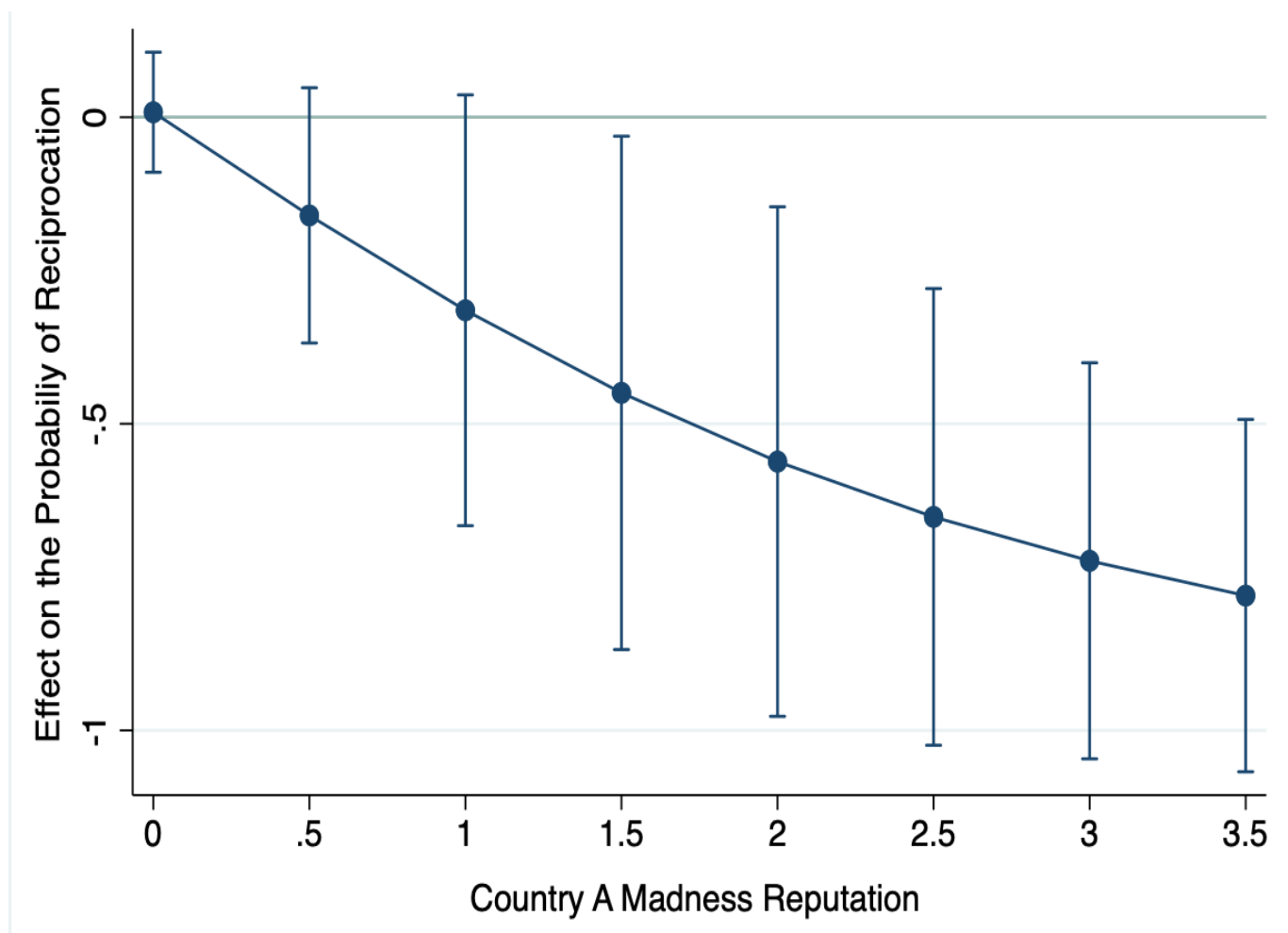


Figure 2 compares the combined effects of madness reputation and nuclear balance on the probability of reciprocation. Among all combinations of nuclear superiority and madness reputation, leaders with a high madness reputation who have nuclear superiority are the most successful at avoiding reciprocation. The predicted probability of reciprocation for these leaders is only 1.31%, while the next lowest probability of reciprocation amongst all leader groups, capturing leaders who have nuclear inferiority and a low madness reputation, is 43.03%. This verifies Hypothesis 2, which suggests that leaders with nuclear superiority who are perceived to be mad will be more successful at compellence than all other leaders.

Figure 2 also reveals several other interesting patterns. Among leaders with low madness reputations, the balance of nuclear power has no substantive effect. Not only is the difference not statistically significant, but the predicted probabilities of reciprocation are almost indistinguishable (43.03% for leaders without nuclear superiority and 43.83% among those with nuclear superiority). Among leaders with high madness reputations, having nuclear superiority is significantly advantageous for reducing the probability of reciprocation. A leader with a high madness reputation without nuclear superiority faces a 79.32% chance of reciprocation. The probability of reciprocation drops down to a 1.31% chance when those same leaders possess nuclear superiority, a reduction of 98.32%. This aligns with the findings in Figure 1 and further corroborates the first hypothesis. I can conclude that nuclear superiority is only helpful for leaders with high madness reputations.

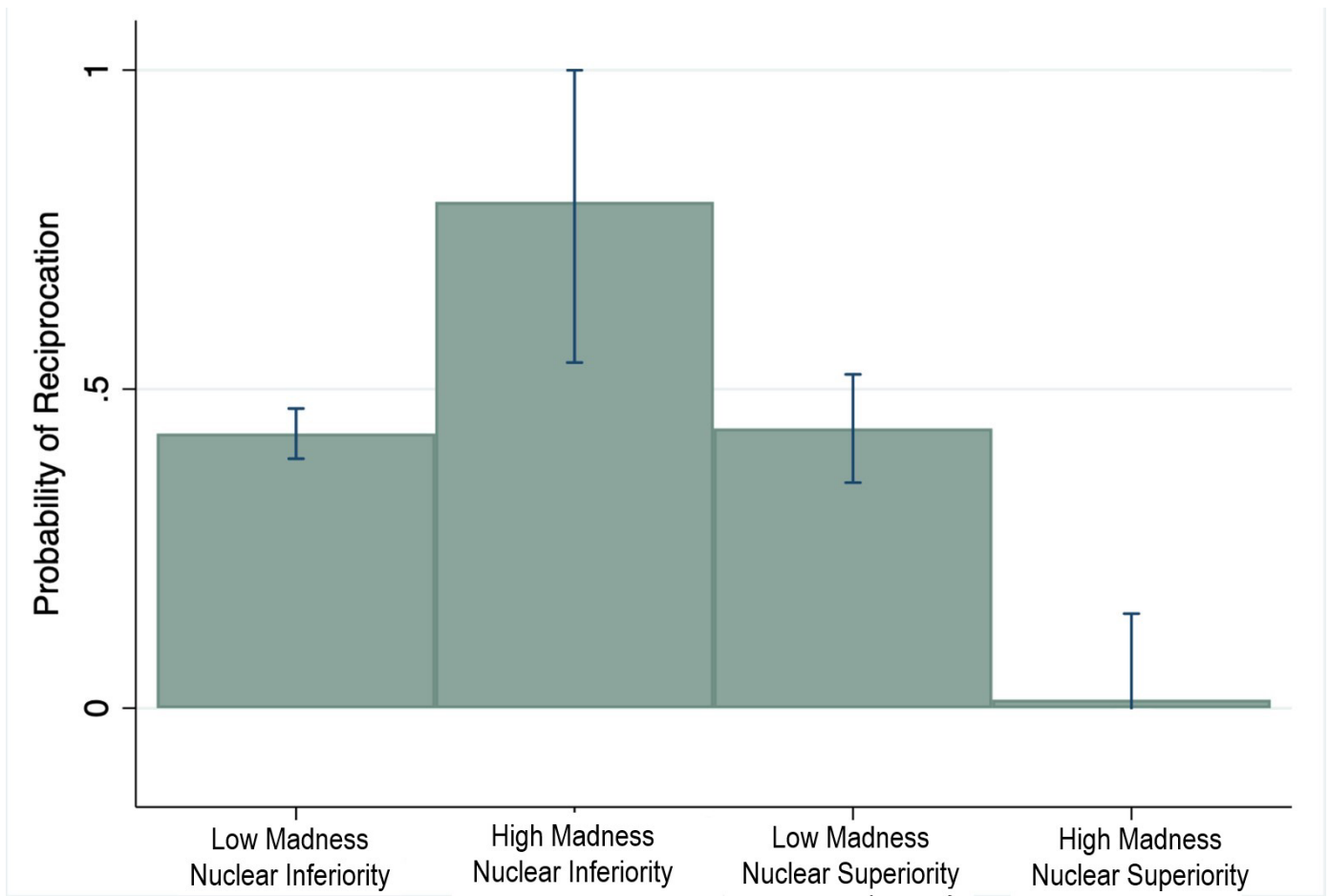
We can also consider how the effect of madness varies with nuclear superiority. Among leaders with nuclear inferiority in a crisis, it is harmful to have a high madness reputation as it increases the probability of reciprocation from 43.03% percent to 79.32% percent. These findings are significant and reveal a stark pattern: Not only are the benefits of madness restricted

to leaders with nuclear superiority, but madness reputations actually harm leaders without nuclear weapons.

Despite the significance of these findings, it is important to highlight that they are driven by a limited sample. High madness reputations and nuclear superiority in MIDs are both rare, resulting in there being very few measurable instances of MIDs involving a state with both nuclear superiority and a leader with a high madness reputation. In fact, only one such MID is incorporated in my analysis. In this MID, Kim Jong Un of North Korea, the only leader within the dataset who has both nuclear superiority and a madness score above 1, faces off against South Korea. In order to determine the significance of this particular case to my overall findings, I recreated Figure 1 without the MID involving North and South Korea. The marginal effect maintained its downward slope but lost statistical significance, indicating that the MID between North and South Korea is essential to my findings. I am cautious about over-interpreting my results as they are heavily reliant upon this singular case, which is itself not an especially major event. This does not prevent me from drawing conclusions, but rather indicates that they should not be over-interpreted. Further research would benefit from exploring this particular dispute through a qualitative lens to determine whether or not it is an appropriate example to base these findings on.



**Figure 2. Predicted Probabilities of Reciprocation as a Function of Madness Reputation and Nuclear Superiority**



**Key**

High Madness indicates leaders with a madness score of 1 (the 99 percentile) on the continuous scale

Low Madness indicates leaders with a madness score of 0 (the lowest possible score) on the continuous scale

## **Chapter 6**

### **Conclusion**

Does having a high reputation for madness enable leaders to leverage the benefits of nuclear superiority to increase the effectiveness of compellent threats? Relying upon the analysis of 931 dyadic militarized interstate disputes between 1986 and 2010, I find evidence that it does. Compellent threats made by leaders with high reputations for madness and nuclear superiority are substantially more effective at avoiding reciprocation than all other counterparts. These findings account for the balance of conventional power, the distance between states, regime type, and other relevant controls.

My analysis builds upon historical research by synthesizing the effects that nuclear superiority and madness reputations have on dispute resolution. The findings validate both hypotheses, as I observe that nuclear superiority has an increasingly beneficial effect for leaders with higher madness reputations and that leaders with both nuclear superiority and a reputation for madness are the most successful when making compellent threats.

The policy implications are especially interesting as they suggest that leaders with nuclear superiority should cultivate a reputation for madness to have greater success in compellent disputes. A reputation for level-headedness, reasonability, or sanity is undesirable for obtaining compellent success given my research findings. However, there are critical caveats when applying these findings to geopolitical interactions. First, nuclear superiority in this study is limited to states that possess an absolute nuclear advantage, that is they have nuclear weapons and are engaged in a dispute with a state that has no nuclear weapons. Due to sample size limitations, I was unable to further break down the balance of nuclear power to account for

differences in the size of nuclear arsenals, the effectiveness of the nuclear weapons, or the striking distance of nuclear missiles. These factors are important considerations for policy makers that should be taken into account before any behavioral adjustments are made.

Further, there may be peripheral drawbacks from cultivating a reputation for madness that are not captured within this study. While a leader may have more success in interstate disputes by developing a reputation for madness, they may face lower domestic approval ratings or have less success in securing trade agreements with other states. Consequentially, I do not interpret these findings as an advocacy for leaders with nuclear supremacy to intentionally cultivate a reputation for madness. Rather, this study reveals that there is a strategic incentive for leaders with nuclear supremacy to actively cultivate a reputation for madness which helps explain why some leaders may intentionally appear insane.

Future research would benefit from exploring the effect of madness on reciprocation at varying levels of nuclear superiority. If these findings are found to be true across all measurements of nuclear superiority, it would indicate even stronger incentives for leaders to cultivate a reputation for madness. The discovered strategic value of appearing mad when making compellent threats with nuclear superiority builds upon the theoretical foundation that originated from Nixon's approach to threat-making in the Vietnam War. Similar intentional displays of irrationality have echoed throughout geopolitics ever since and will surely continue as long as leaders stand to benefit from the combination of nuclear superiority and holding a reputation for madness.

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## ACADEMIC VITA

### Benjamin M. Brauser

benbrauser@comcast.net • (814) 644 3277

#### Education

**The Pennsylvania State University**

August 2020 – May 2024

*Schreyer Honors College*

*B.A. in Political Science & B.S. in Economics*

#### Work Experience

**Bates White Economic Consulting**

Washington, DC

*Summer Consultant*

*June 2023 – August 2023*

- Calculated damages in mass tort litigation through analysis on Stata and Excel to support expert testimony
- Drafted expert reports for product liability trials synthesizing a blend of economic and legal research
- Fundraised over \$25,000 to alleviate global poverty by orchestrating three firmwide fundraising competitions

**United States Congress**

Washington, DC

*Legislative Intern*

*June 2022 – August 2022*

- Wrote floor speeches delivered by the Congressman and constituent letters on economic policy
- Advocated for stakeholder considerations while discussing legislations with staff and Members of Congress
- Prepared a report on the local economic impact of the Bipartisan Infrastructure Legislation

**Penn State's Office for Government and Community Relations**

State College, PA

*Federal Relations Intern*

*January 2022 – May 2022*

- Examined legislation to develop key issue summaries and internal memos for upcoming funding requests
- Published a monthly policy newsletters for distribution to federal legislative offices

#### Honors

- Paterno Fellows Program (2021 – 2024)
- Presidential Leadership Academy (2021 – 2024)
- John W. Stuart Award (2021)
- Barry Directorship Liberal Arts (2022)
- D. DiFrancesco Scholarship in Liberal Arts (2022)
- Kelmer Award in Political Science (2022)
- Virginia Chapel Executive Internship (2023)
- Kim Anderson Memorial Political Science Award (2024)