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CRUISING INTO CONFLICT:
A MIXED METHODS EXAMINATION OF CRUISE MISSILE POSSESSION AND
THE INITIATION OF MILITARY FORCE

by

Dennis P. Crawford

A DISSERTATION

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CRUISING INTO CONFLICT:
A MIXED METHODS EXAMINATION OF CRUISE MISSILE POSSESSION AND
THE INITIATION OF MILITARY FORCE

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University of Nebraska, 2019

Advisor: Ross A. Miller

This research examines the effect of cruise missile possession on state behavior. Specifically, it seeks to determine if countries who possess cruise missiles are more likely to initiate a military threat, display, or use of force than countries who do not possess cruise missiles. Traditional International Relations theory suggests that, all else being equal, a state with an asymmetrical military advantage should enjoy concessions from target states, decreasing the likelihood of armed conflict. Accordingly, coercion theory warns the use of armed force to change adversarial behavior should be exercised sparingly. However, this dissertation finds that states possessing cruise missile initiate armed force at twice the rate of states who do not possess cruise missiles and are significantly more likely overall to initiate a militarized interstate dispute or crisis. These conclusions suggest these weapons provide a qualitatively unique capability that makes armed force an attractive coercive option at lower levels of conflict.

As more states seek to fill defense gaps and counter major power military capabilities, cruise missiles continue to proliferate, lending urgency to an understanding of their effects on conflict initiation short of war. Using a mixed method approach, this research provides a systematic empirical analysis, using an original dataset of cruise missile possession created specifically for this project, to measure changes in state

behavior. Additionally, I present two explanatory case studies, to illustrate coercive cruise missile use, focusing on the 1982 Falkland Conflict and the use of cruise missiles as a coercive tool by the United States in the 1990s. This research may have profound implications for both international relations scholars and policy makers. The results demonstrate that cruise missiles increase the likelihood of using military threats, displays, and uses of force regardless of regime type. More research may be needed to understand the impact of technology on coercive strategy, while policy makers may choose to call for more robust controls on the spread of cruise missile technology.

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DEDICATION

For Dad

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GLOSSARY

<i>Crisis</i>	“A threat to one or more basic values, along with an awareness of finite time for response to the value threat, and a heightened probability of involvement in military hostilities.” (Brecher and Wilkenfeld 2000, 3)
<i>Conflict</i>	An activity between conscience beings to reconcile a disparity in wants, needs, or obligations that exists when two parties aspire to carry out acts that are mutually incompatible or contradictory. (Nicholson 1992)
<i>Cruise Missile</i>	“An unmanned, expendable, armed, aerodynamic, air-breathing, autonomous vehicle.” (Toomay 1981, 31) This definition includes, but is not limited to, Anti-Ship Cruise Missiles (ASCM) and their variants such the Soviet SS-N-2 Styx, the Chinese HY-2 Silkworm, the U.S. RGM-84 Harpoon, and the French MM-38 Exocet as well as Land Attack Cruise Missiles and their variants such as the Indian BrahMos, the U.S. BGM-109 Tomahawk, and the United Kingdom’s Storm Shadow.
<i>Dispute</i>	A situation in which the, “actors involved are willing or forced to make a trade-off between highly valued but mutually incompatible objectives ... involving a rapid and acute change in the perception of threats and promises for each [participant].” (Maoz 1982, 219)
<i>Global Positioning System</i>	“A satellite-based radio navigation system operated by the Department of Defense to provide all military, civil, and commercial users with precise positioning, navigation, and timing.” (Gortney 2010, 99)
<i>Initiator</i>	“...the ‘first mover’ that is, the state that first crosses the [militarized interstate dispute] threshold by making a threat involving force, moving military forces, or actually using military force against the other.” (D. S. Bennett and Stam 2000b, 658)
<i>Militarized Interstate Dispute</i>	“united historical cases in which the threat, display or use of military force short of war by one member state is explicitly directed towards the government, official representatives, official forces, property, or territory of another state.” (D. M. Jones, Bremer, and Singer 1996, 168)

Military Force

Using a state's armed services to physically compel an adversary using violence or coercion

QUAN --> qual

A mixed methods notation indicating sequential quantitative and qualitative data collection and analysis, with weight/priority on the quantitative phase, where the qualitative phase builds on the quantitative phase (Morse 1991).

ACRONYMS

A2/AD: Anti-Access, Area Denial

ALCM: Air-Launched Cruise Missile

ASCM: Anti-Ship Cruise Missile

BVR: Beyond Visual Range

CALCM: Conventional Air-Launched Cruise Missile

CoW: Correlates of War

DoD: Department of Defense

DSMAC: Digital Scene Matching Area Correlator

DV: Dependent Variable

GPS: Global Positioning System

ICB: International Crisis Behavior

ICBM: Intercontinental Ballistic Missile

IO: International Organization

IIS: Iraqi Intelligence Service

IV: Independent Variable

LACM: Land-Attack Cruise Missile

LRSO: Long Range Standoff Weapon

MID: Militarized Interstate Dispute

MTCR: Missile Technology Control Regime

NATO: North Atlantic Treaty Organization

QUAL: Qualitative Analysis

QUAN: Quantitative Analysis

RPA: Remotely Piloted Aircraft

SAM: Surface to Air Missile

SLAM: Strategic Low Altitude Missile

TERCOM: Satellite Terrain Contour Mapping

TNT: Trinitrotoluene

UAV: Unmanned Aerial Vehicle

U.S.: United States [of America]

USSR: Union of Soviet Socialist Republics

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CHAPTER ONE: INTRODUCTION

Cruise missiles offer states a versatile tool to contend with international challenges, making them an attractive option across a spectrum of crisis situations. But, do cruise missiles change state behavior by increasing the probability a state will use military force to achieve its foreign policy objectives? More states have in recent years sought inventive ways to fill defense gaps, reinforce the credibility of their threats, and counter the major powers' conventional military capabilities. To date, however, there has been little systematic research into the unintended consequences of procuring these weapons. This dissertation uses a mixed method research design to empirically test the effects of cruise missile possession on state behavior, using an original data set of cruise missile possession created specifically for this project. Its goal is to determine if states armed with cruise missiles have a greater likelihood of threatening, displaying, or using force. Using new empirical data, I find states armed with cruise missiles, regardless of regime type, are more likely to initiate military force to achieve their foreign policy objectives than states that lack this capability. This research may have implications for the study of armaments and conflict initiation.

In this introductory chapter, I orient the research with a brief overview of the major concepts and procedures used to answer the primary research question: Does the possession of cruise missiles increase the likelihood a state will use force in pursuit of its foreign policy objectives? First, I present the purpose and significance of this research. Beyond identifying the gap in the current literature, I also present a brief overview of the relevant milestones of cruise missile development over the last century. Second, I introduce the project's research methodology. By using an explanatory sequential mixed

method approach, I can best leverage the strengths and supplement the weaknesses of the quantitative and qualitative approaches typical of social science research. Next, I present my findings. Beyond testing each hypothesis, I contribute a new understanding of how cruise missiles affect state behavior and provide new perspectives on past incidents of conflict initiation. I conclude the chapter with a discussion of the dissertation's limitations and scope conditions as well as provide a roadmap to navigate each chapter.

Prior research and political attention on force initiation focuses on the effects of state characteristics such as regime type, distance, state wealth and resources, and major power status. Only a relatively small portion of this literature pays attention to the effects of weapons, and that attention is almost exclusively on ballistic missiles and nuclear weapons (e.g. Bell and Miller 2013; Brody 1963; Bueno de Mesquita and Riker 1982; A. Carter 2016; Davenport, Horner, and Kimball 2012; Gartzke and Jo 2009; Halperin 1961; Mettler and Reiter 2013; Obama 2015; T. V. Paul 1995; Sobek, Foster, and Robison 2012). There has been little systematic empirical research into the effects of cruise missiles on likelihood of using the military to coerce changes in adversarial behavior (Heidenrich 2006).

One potential consequence of this oversight – at least in policy circles – has been relatively weak international agreements to control cruise missile proliferation, resulting in a quiet spread of cruise missiles both horizontally (interstate) and vertically (intrastate) (Gormley 2009), and increased use among state and non-state actors to coerce their adversaries in pursuit of their objectives (Gruselle 2006; Jackson et al. 2008). This study seeks to fill the gap in the literature by systematically investigating whether cruise missiles alter state behavior, specifically whether there is a connection between cruise

missiles and the likelihood a state will initiate military force, to include threats and demonstrations, to coerce adversaries.

Purpose and Significance

Cruise missiles may provide a means to use force in more diverse contexts than other types of weapons, such as the use of ground troops or manned air strikes. Thus, cruise missiles are ideal weapons for coercion.¹ The purpose of this dissertation is to understand the effects of cruise missiles on state behavior by empirically testing whether possession of missiles make the use of military options in crisis situations more likely. The relationship between these weapons and conflict initiation is Janus-faced in the literature. On the one hand, there is a theoretical basis to assume possession of advanced weapons should reduce incidence of conflict by increasing the possessor's leverage against an adversary. On the other hand, in some contexts these weapons may instead increase the likelihood a state uses force if doing so is politically tenable and the risk of escalation is low. For instance, bargaining theory suggests that, all else equal, asymmetrical military advantages, such as those provided by cruise missiles, should decrease the likelihood of war as the weaker target state has an incentive to make concessions knowing they are at a disadvantage and resistance puts them in peril (Blainey 1988; Fearon 1995). However, coercive diplomacy, operating at levels short of war, explains the exercise military power as an exception or tacit signal of resolve in crisis bargaining situations (George 1991; George, Hall, and Simons 1971; Schelling 1956,

¹ Nye (2011) identifies a range of power behaviors ranging from hard behaviors, such as commanding or coercing, to soft behaviors, such as persuading and co-opting, to alter adversarial behavior.

1960; Snyder and Diesing 1977). Herein lies a puzzle: If cruise missiles provide a qualitative advantage that should induce concessions from an adversary without violence, why do we conspicuously observe their use not only in warfare, but more notably in crisis bargaining situations in which the use of force would otherwise be unlikely, or at worst, a final contingency? Thus, we must ask: Do cruise missiles change state behavior by increasing the likelihood a state will use its military to achieve its foreign policy objectives?

I examine how cruise missiles affect the initiation of armed conflict at the state level, using coercion theory as a theoretical framework (see George 1991; George, Hall, and Simons 1971; Schelling 1956, 1960, 1967; Snyder 1961; Snyder and Diesing 1977). I rely heavily on George, Hall, and Simons' (1971) concept of coercive diplomacy to sketch out a theory of cruise missile utility and use. Coercive diplomacy involves "efforts to persuade an opponent to stop and/or undo an action he is already embarked upon." (George 1991, 5) Coercive diplomacy may require threats or displays of force to persuade an adversary that the state is willing to use force if an adversary fails to meet its demands. However, to maintain credibility the state may be forced in some situations to follow through with its threats by using limited military force, even if the use of force may carry the risk of escalation (Slantchev 2011). Using this framework, I hypothesize that states with cruise missiles have an increased likelihood of employing threats, displays, and force that are independent of regime type, because of the qualitatively different capabilities missiles provide in terms of stealth, precision, reliability, and cost.

Cruise missiles are a special class of long-range attack weapon. Unlike ballistic missiles which are generally unguided, typically use little more than unguided ballistic

trajectory to reach their targets, and are unpowered in the final stages of flight, cruise missiles are autonomously navigated from launch to target (Toomay 1981). Once launched, cruise missiles essentially become small jet aircraft, propelled by rockets and/or jet engines, as they approach their targets. Lacking a human pilot, a cruise missile employs a self-contained navigation system such as satellite navigation or terrain mapping radar to guide the missile, enabling it to fly extremely low to the ground. These capabilities and flight profiles make them incredibly difficult to detect and deter. Their unmanned nature virtually eliminates the risk to an aircrew. However, their unmanned nature – like remotely piloted vehicles (aka drones) – means their use outside open warfare may fall into a belligerency grey zone in which states seek only limited political gains which may be short of outright military victory (Michael Horowitz, Kreps, and Fuhrmann 2016; Matissek 2017; Mazarr 2015).

Cruise missiles are not defined by their range, but are instead typified by intended mission or launch mode: Land Attack Cruise Missiles (LACM) for fixed and mobile land-based targets, and Anti-Ship Cruise Missiles (ASCM), for targets at sea (Ballistic and Cruise Missile Threat 2013). Depending on model and mission, either may be launched from the ground, ships, submarines, and aircraft (Kueter and Kleinberg 2007) while carrying either conventional or nuclear munitions (Feickert 2005b).² Although the majority of countries with cruise missile capabilities have only the shorter range ASCM,

² Cruise missile warheads range in explosive yield from 1,000 pounds of TNT in the Tomahawk, to nuclear yields (U.S. Navy Chief of Information 2018). The 2018 U.S. Nuclear Posture Review calls for a new, low-yield nuclear cruise missile, otherwise known as a “tactical nuclear weapon” to counter Russian tactical nuclear presence on their western frontier (Mattis 2018a). Due to the relatively low numbers of nuclear cruise missiles and their dual capability, I treat all cruise missiles for this research as conventional.

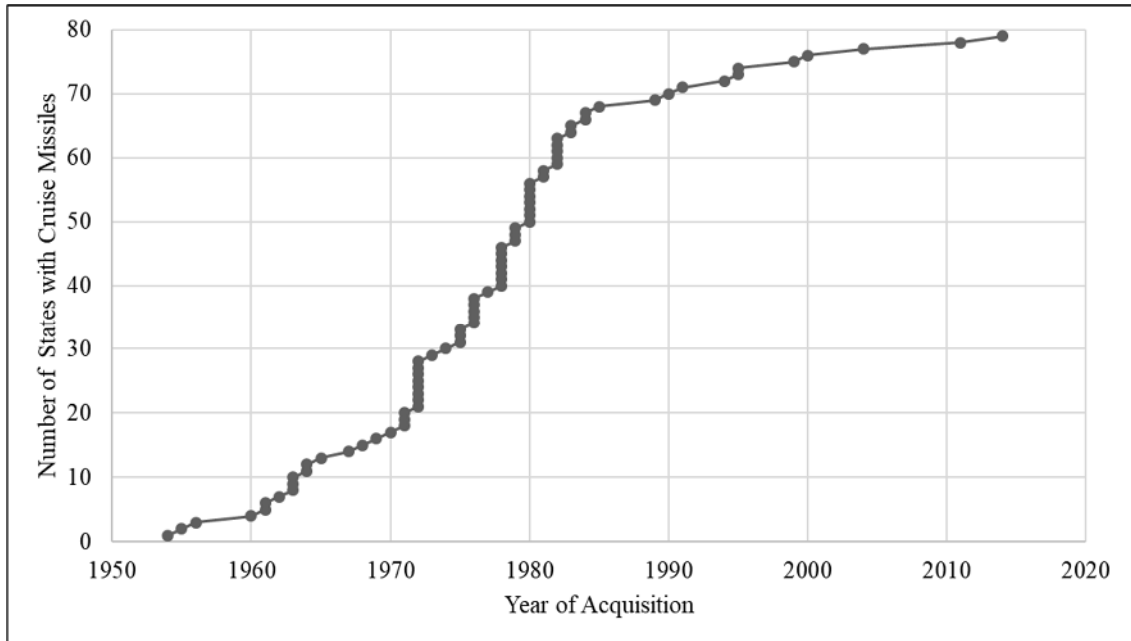
the increase in production and distribution of LACMs to other states is expected to increase as the technology and knowledge required to build and employ these weapons becomes accessible to a wider range of countries (Feickert 2005a; Gormley 2008a).

Conceived in the early 1900s as a solution to World War I's trench warfare, cruise missiles did not come into their own until the Cold War, when the superpowers sought weapons capable of countering their adversary's potentially superior military capabilities. For instance, the Soviet Union focused its efforts on developing anti-ship cruise missiles (ASCM) to counter American naval strength, while the United States created intercontinental ballistic missiles and cruise missiles capable of delivering nuclear weapons as well as cruise missiles for use in conventional land attack missions such as those anticipated in a future European land war.³

After Egypt's successful 1973 sinking of the Israeli naval ship, Eilat, using a single Soviet Styx cruise missile fired from a relatively small gun boat, other states estimated they, too, could supplement their military defenses with cruise missiles to counter threats posed by more powerful or capable militaries (Koh 2016; Pavelec 2010). This understanding has led to the slow but steady proliferation of cruise missiles throughout the world (Feickert 2005a; Gormley 2008b; Gormley and McMahon 1995; Mishra 2011), as displayed in Figure 1.1. By the mid-1970s, an explosion in interest, and technological leaps forward culminated in one of the highest-profile and technologically advanced cruise missiles of all time, the American Tomahawk Land Attack Cruise Missile.

³ Notably, the intercontinental land attack cruise missile concept, largely abandoned since the Cold War, has been pursued with renewed interest by Russia (MacFarquhar and Sanger 2018).

Figure 1. 1 Cruise Missile Proliferation, 1950-2014



Data sources: Stockholm International Peace Research Institute (SIPRI), “SIPRI Arms Transfers Database,” undated, for 1950-2015 data; Werrell, Kenneth P. 1985. *The Evolution of the Cruise Missile*. Air University; Systems Assessment Group NDIA Strike, Land-Attack, and Air Defense Committee. 1999. *Feasibility of Third World Advanced Ballistic and Cruise Missile Threat. Volume 2: Emerging Cruise Missile Threat; Ballistic and Cruise Missile Threat*. 2013. Wright-Patterson Air Force Base: National Air & Space Intelligence Center Public Affairs Office; Kueter, Jeff, and Howard Kleinberg. 2007. *The Cruise Missile Challenge: Designing a Defense against Asymmetric Threats*. George C. Marshall Institute.; Ozga, Deborah A. 1994. “A Chronology of the Missile Technology Control Regime.” *The Nonproliferation Review* 1(2): 66–93.

The United States introduced the world to the operational capabilities of the Tomahawk Land Attack Cruise Missile during the 1991 Gulf War. The Tomahawk was the culmination of over seventy years-worth of cruise missile development. It was capable of evading Iraqi air defenses, striking targets with precision and impunity. As Chapter Five demonstrates, in the years to follow, the United States found itself increasingly reliant on the Tomahawk as the go-to weapon for coercive diplomacy in the 1990s and beyond. Between 1991 and 2018, the United States would use cruise missiles

against both state and non-state adversaries every other year, on average, for situations ranging from low-scale coercive campaigns to large-scale warfare (Allen and Martinez-Machain 2018b; Cole 2017; Gormley 2008b).⁴ Contrary to the Powell Doctrine – which states a nation either must be willing to fully commit the nation’s armed forces, or the situation is not sufficiently important to require any military action – the United States had developed a weapon which allowed the use military power in such a way as to neither instigate significant condemnation (e.g. United Nations approval), nor put troops in harm’s way (Brigety II 2007). The cruise missile has effectively lowered the bar for the United States and other adopters to respond to threats militarily, thus lowering the cost of using military force and making it the go-to weapon for conflicts short of war (Sparks 1997; Walzer 2006).⁵

States targeted by cruise missiles appear less likely to perceive the attack as an act of war, keeping overall escalation of a conflict to a minimum. This is evidenced by the nearly continual use of cruise missiles by states throughout the world since the early 1990s in situations that rarely result in full-scale war. For example, since 2014 Russia has used its Kalibr cruise missile to support its allies in the Syrian civil war (Kramer and Barnard 2016). Even non-state actors, such as Iranian-backed rebels in Yemen, have used cruise missiles against state targets, including the United States Navy (Rosenberg and Mazzetti 2016). When a state decides to use a cruise missile, they do not have to

⁴ Other states increasingly rely on cruise missiles to punctuate their coercive strategies as well, such as Russia’s use of Kalibr, and British and French use of Storm Shadow cruise missiles in the Syrian civil war, and Chinese installation of anti-ship cruise missiles in the South China Sea (Kramer and Barnard 2016; Lendon 2018; Reuters 2018a).

⁵ Some speculate remotely piloted vehicles (aka drones) also increase the probability of the use of force given their low cost and minimal risk (Zenko 2013).

commit large amounts of human, material, and political capital to a conflict. This low cost of entry effectively lowers the threshold for the use of military options, particularly in situations below the level of large-scale conflict.

Cruise missiles are well suited for situations that call for strategic coercion to compel or deter adversarial behavior, or to display or test resolve. These weapons help states accomplish these goals by providing capabilities that are qualitatively different from many other conventional weapons. Cruise missiles have high utility throughout the spectrum of conflict by lowering the costs usually associated with mobilizing forces or initiating violence against the adversary. The answer to whether they increase this likelihood may be relevant to policy makers as they tackle such questions as arms control and combat modernization. I do not suggest that cruise missiles increase the likelihood a state will engage in large-scale conflict such as war. However, at less-than-war levels, cruise missiles provide a means of active coercion at low political and physical cost.

Three Phases of Cruise Missile Development

To understand how cruise missiles shape the initiation of militarized interstate disputes, it is helpful to frame the evolution of the cruise missile's technology, doctrine, and use.⁶ The history of the American cruise missile program can be illustrated through three phases of technological development.⁷ These three periods show the cruise

⁶ See Appendix A for more detailed explanation of the three phases of cruise missile development.

⁷ Though several countries have developed significant cruise missile programs, for simplicity I base this classification on the U.S. case to illustrate how cruise missiles have gone from tactical battlefield concept, to nuclear strategic and tactical weapon, to coercive option in less than 100 years.

missile's evolution from a weapon of promise with little capability or functionality, to a lethal and eminently usable surgical instrument of coercion.

In the first phase, from World War I until the end of World War II (circa 1914-1945), the concept of a pilotless flying bomb came into its own. This phase is marked by a weapon whose concept was sound but lacked the technological requirements to fully develop to its potential. Early cruise missiles were little more than miniature unmanned biplanes that soldiers launched toward the enemy's location. Onboard timers were used to program the missiles to cease flight when they were estimated to be over enemy targets. Only in the final days of World War II did required advancements in propulsion and navigational technologies allow the German Luftwaffe to effectively field the first fully operational cruise missile, the V-1 "Buzz" bomb.

The second phase (circa 1945-1970) witnessed prolific military and civilian technological advancement, enabling weapon engineers to revisit earlier disappointments in flying bomb development. While not perfect, the progress made over the course of the Cold War, fueled by ideological competition between the superpowers, finally united the technologies needed to make the cruise missile usable as a nuclear delivery and anti-ship weapon system. Most early cruise missiles in the second phase of development descend from the relatively successful German V-1. By the mid-1950s, the United States began to field several long-range nuclear armed cruise missiles to augment its strategic bomber force. Most early nuclear cruise missiles were unsuccessful. At the same time, the Soviet Union developed anti-ship cruise missiles in order to counter Western naval superiority. Unlike their American counterparts, Soviet cruise missiles required less

technological sophistication due to the simpler navigational task of targeting nearby ships at sea, resulting in more successful weapons.

The third phase of cruise missile development (1970-present) began in the waning years of the Cold War. Advancements in navigation and propulsion drove a newfound appreciation for conventional applications, enabling what was once the “unwanted black sheep” of the weapons community (Werrell 1989) to take a central role in conventional denial and punishments strategies. During this period, the Tomahawk cruise missile’s development would enable the United States to demonstrate a decisive foreign policy posture toward threats while minimizing risk to military personnel, and reducing collateral damage abroad. Accurate, sophisticated, navigation technologies and engine miniaturization made a change in mission from nuclear delivery vehicle to precision weapon possible. In this phase, the cruise missile became a symbol of coercive power.

The cruise missile’s evolution led to its ability to affect state behavior. Initially, the weapon was little more than an idea seeking to fill a tactical battlefield need. The second phase of cruise missile development saw cruise missiles become both a strategic nuclear delivery vehicle and a means of denying enemies at sea. It was not until the third phase of development that supporting technologies ultimately caught up with practical missions. Not only a nuclear delivery vehicle and way to threaten enemy shipping, cruise missiles in the third phase could directly or indirectly threaten, deny, or punish an adversary in situations where the use of force would otherwise be less likely. Cruise missile possession, by providing a qualitatively different capability than other weapons, may increase the likelihood of a state using force to pursue its foreign policy objectives.

Contributions

This dissertation contributes to force initiation literature by implementing an explanatory sequential mixed method empirical analysis based on original data collected on cruise missile possession to answer the core research question: Do cruise missiles change state behavior by increasing the probability a state will use its military to achieve its foreign policy objectives? This effort constitutes the first systematic empirical investigation of this question. The answer to this question offers not only policy relevant implications in terms of a state's selection of coercive diplomatic options and strategic signaling, but it may also impact our general understanding of the effect of military technology on conflict resolution.

Much of the current force initiation literature focuses on state-centric correlates of force initiation such as regime type, wealth, great power status, and territorial contiguity. But, as mentioned above, there is scant literature focusing on the effects of weapons on a state's decision to initiate force against adversaries. Much of this literature is directed toward nuclear weapons (e.g. Feaver 1992; Gaddis 1986; Ganguly and Wagner 2004; Jervis 1976; R. Powell 1988; Sagan 1994; Sagan and Waltz 2013; Schelling 2008), but recently, work has turned toward conventional weapon systems such as ballistic missiles (Mettler and Reiter 2013) and remotely piloted vehicles (aka drones) (e.g. Andresen 2016; Dowd 2013; Michael Horowitz, Kreps, and Fuhrmann 2016; Zenko 2013). Although some literature examines the role of cruise missiles in military strategy and their potential threat to international security, it does not address force initiation nor does it systematically test for any correlation between their possession and military force.

The relatively small body of literature that examines cruise missiles focuses either on the abstract perception that their proliferation presents a military threat, or on technical aspects and the debate over suitable missions. Despite the cruise missile's surprisingly long history, little was written on the topic until the 1980s, when new uses for non-nuclear cruise missiles became feasible. In the 1990s, much of the literature transitioned from a bi-polar nuclear perspective to concerns over proliferation and use by poorer states. Though scholars have covered a lot of ground in this research, the literature lacks a systematic empirical analysis to test the effects of cruise missiles on state behavior. As more states seek to offset real or perceived adversarial military power by supplementing their militaries with cruise missiles, the need to understand the effects cruise missiles have on conflict becomes pressing. I seek to fill that gap by empirically evaluating the relationship between the possession of cruise missiles, coercion, and the use of military force, effectively bridging the cruise missile and force initiation literatures.

There are two reasons this research is important. First, it contributes to the growing body of knowledge on the connection between technology and the initiation of armed force. Given the increasing importance of cruise missile issues in current international relations, such as the alleged violation by Russia of, and the United States' planned withdrawal from, the Intermediate Range Nuclear Forces Treaty (Gibbons-Neff 2017; Reuters 2018b), a project of this type is warranted. Second, this research may aid policy makers by providing a scientific understanding of the implications of arms

proliferation on international stability while either developing new or bolstering existing arms treaties or agreements such as the Missile Technology Control Regime (MTCR).⁸

Methodology

To answer the question of whether cruise missiles affect state behavior, I used an explanatory sequential mixed methods research design. The mixed methods research design integrates quantitative and qualitative methods of data collection and analysis to support conclusions by building off the strengths and weaknesses of each individual approach (Johnson and Onwuegbuzie 2004; Plano Clark and Ivankova 2015). This research is particularly suited for this type of design. The quantitative strand uses empirical data to statistically determine correlations between cruise missile possession and the use of force while the qualitative strand helps decipher and explain the findings otherwise obfuscated in the quantitative empirics (Creswell and Plano Clark 2011; Falletti and Lynch 2009). Additionally, the quantitative strand contributes a degree of generalizability not possible in qualitative case studies alone (Plano Clark and Ivankova 2015). The dissertation's research design proceeds in three phases.

In the first phase of the mixed methods design, I performed a quantitative analysis to empirically test the correlation between cruise missiles and state behavior. To determine the likelihood an initiator state, armed with cruise missiles, initiates a military crisis, I used the directed dyad-year – covering all pairs of states, 1946-2007 – as the unit

⁸ The Missile Technology Control Regime is an international agreement established in 1987 by the seven most industrialized states (Canada, Italy, Japan, the United Kingdom, the United States, and West Germany) to control the spread of weapon technology capable of delivering nuclear weapons, primarily ballistic and cruise missiles. More states have since signed on to the regime and it remains in effect today (Sidhu 2007).

of analysis. By using a directed dyad-year, I leveraged multiple levels of analysis to include control variables not possible in higher-level data aggregation (e.g. the system year) (D. S. Bennett and Stam 2000b; Sprinz and Wolinsky-Nahmias 2004). I used applicable observations queried between 1946 and 2007 to establish the rate and likelihood of cruise missile-equipped states initiating conflict in the years in which cruise missiles would have been operational beginning in the second phase of cruise missile development.

To obtain the empirical observations, I used two common conflict data sets, the International Crisis Behavior (ICB) data set (Brecher et al. 2017) as operationalized by Mettler and Reiter (2013) and the Correlates of War Project's (CoW) Militarized Interstate Dispute data set (MID), version 4 including National Material Capabilities data (Palmer et al. 2015) to derive dependent and control variables. For robustness, I used two primary dependent variables, ICB challenges and MID initiations, to measure the application of military force. Also, I exploited MID hostility levels to measure instances where states used threats and displays of force.

I coded regime type using two data sets. To control for dyads in which both states are democracies in the general force initiation model, I followed Metter and Reiter's (2013) use of data derived from the Polity 4 Project (Marshall, Gurr, and Jagers 2016). To test for variances in the likelihood democracies or autocracies will initiate conflict when in possession of cruise missiles, I used the more parsimonious Democracy-Dictatorship data set (Cheibub, Gandhi, and Vreeland 2010) for its observational properties, reproducibility, and identifiable coding properties.

Additionally, I derived the primary independent variable – cruise missile possession – from original data on cruise missile possession compiled and coded specifically for this project. Cruise missile possession is based on data from the Stockholm International Peace Research Institute (SIPRI) Arms Transfers Database (SIPRI 2015), the National Defense Intelligence Agency (Systems 1999), Kueter and Kleinberg (2007), and Werrell (1985). Finally, I controlled for factors believed to correlate with a greater likelihood of a state using military force. These factors included, but were not limited to, ballistic missile and nuclear weapon possession, major power status, national material capabilities, interstate rivalry, geographic contiguity, and regime type.

In the qualitative second phase, I supplemented the study's core element, statistical analysis, with two explanatory case studies selected from the statistical sample to examine the circumstances behind the use of military coercion (Lieberman 2005; Morse 1991). I purposively selected the case studies from the set of observations in the MID and ICB data sets using case selection strategies identified by Seawright and Gerring (2008) for typical cases that exemplify the relationships identified in the quantitative strand. This method effectively integrates and binds together the quantitative and qualitative strands of research (Fetters, Curry, and Creswell 2013; Maxwell, Chmiel, and Rogers 2015). The first case study examined Argentina's use of the Exocet cruise missile in the 1982 Falklands Conflict. The second case studied the American use of cruise missiles in the 1990s. Each case represented instances in which the first phase's statistical models produced a relatively high predicted probability that a state will initiate

conflict. The advantage of selecting typical cases in this research is that they allowed a better exploration of the causal mechanisms at work in the quantitative analysis.

Following the completion of the quantitative and qualitative phases of research, I interpreted the results of each strand together to evaluate the implications for the given hypotheses using associative inferences (Creswell and Plano Clark 2011). In the third phase, I critically reviewed the results as they apply to coercive theory and the hypotheses, ultimately seeking and elucidating relevant policy implications and highlighting opportunities for further research.

Findings

The results of this research supported the hypotheses. Descriptive statistics and regression analysis performed in the quantitative strand of analysis indicated strong evidence that states armed with cruise missiles are significantly more likely to initiate threats, display force, and use military force against their adversaries. States possessing cruise missiles initiated conflict at a rate 2.8 times that of non-cruise missile states for ICB challenges and MID initiations. The odds of a state initiating an ICB challenge increased 2.42 times, and a MID 2.49 times, after procuring cruise missiles.

Additionally, when a state acquires cruise missiles, its risk of resorting to threats increases 231 percent and the risk of displaying force increases 260 percent. Finally, though there are only eleven states armed with land attack cruise missiles, they, too, are significantly more likely to initiate a militarized interstate dispute than states with no cruise missiles at all. States armed with land attack cruise missiles initiate ICB challenges 9.7 times more often and MID initiations 5.6 times more often than states

without these missiles. This comes as no surprise given the advancements in navigation and propulsion that made the land attack cruise missile the “go to” weapon since its first use in the 1991 Gulf War. The evidence suggests that these results are stable regardless of regime type. Whether a state is democratic or authoritarian, there was no difference in the likelihood they will initiate military force if in possession of cruise missiles.

The case studies supported and illustrated these results. In the first case study, I observed that the purchase of air-launched Exocet anti-ship cruise missiles by Argentina in the late 1970s coincided with a reversal of a long-standing tradition of peaceful diplomacy toward the United Kingdom for repatriation of the Falkland Islands. Though it would be premature to declare causality – there were many factors involved in the decision to invade the Falkland Islands – there is powerful evidence to infer that the denial capabilities offered by the Exocet missiles played no small role in the decision to take the Falkland Islands by force. Argentina’s possession of cruise missiles helped the Argentine junta erroneously rationalize occupation by convincing them that the British, long sending signals that they were willing to surrender sovereignty, would not risk sending a fleet to expel an Argentine occupation force. The perception of lower risk, backed by the cruise missile’s military denial capabilities, helped persuade the Argentinians to invade the islands in hopes of coercing the British into surrendering their sovereignty claims. However, unbeknownst to the Argentine leadership, the British were not aware that Argentina’s Exocets were fully operational, knowledge that may have significantly factored in their decision to retake the islands by force. Consequently, the Exocets played no role in British decisions until well into the conflict, and only after they

sank important British ships. This effectively altered British naval strategy. Though not the entire story of the conflict, cruise missiles clearly played an important part.

In the second case study, I found that the successful use of Tomahawk land attack cruise missiles in the 1991 Gulf War showed the United States that cruise missiles offered a low-cost coercive tool. By using cruise missiles in situations that called for a demonstration of resolve to domestic and international audiences, using force to punish undesirable behavior no longer carried a significant political or escalatory risk. The qualitatively different nature of the cruise missile offered a reduction in casualties and collateral damage deemed more palatable to domestic audiences, lowering the bar for limited uses of force to pursue foreign policy. The case study illustrated how domestic public opinion, political pressure, and advanced weapons can combine to increase the probability that military force may be used to deal with secondary national security challenges.

Limitations

The research presented here is not without limitations. As King, Keohane, and Verba (1994) caution, “All methods – whether explicit or not – have limitations.” (8) Methodologically, the quantitative analysis struggles to explain causality. This challenge is mitigated in part by the illustrative case studies, and their aspiration to show how quantitative findings may appear in the so-called real world. But true causality in ex-post social scientific research presents a challenge. In particular, it is difficult to isolate the effects of any single weapon system on something so grand and multifaceted as interstate

militarized conflict (Lieber 2005). As Van Creveld (1991, chap. Introduction, para. 3) warns us,

To use a simple analogy, military technology affects warfare like waves spreading from a stone thrown into a pond. The disturbance is strongest at the point of impact; the farther the ripples spread, the weaker and less noticeable they become. And the farther they go, the more likely they are to lose their identity by becoming intermixed with ripples thrown up by other stones or reflected back from the pond's banks. Similarly, weapons and weapon systems make their power felt principally during combat, but war consists of much else besides. Apart from tactics, there are operations, strategy, logistics, intelligence, "C3" (command, control, communication), and organization, to mention but a few. Naturally, all of these are affected by weapons, but all are also strongly influenced by other kinds of hardware, as well as by technology in its abstract sense. Thus we must begin by taking into account such mundane things as roads, vehicles, communications, timekeepers, and maps, and end by considering the most complex problems of technological management, innovation, and conceptualization.

Furthermore, it is important to understand that this research does not test the cruise missile's effect on the initiation of war. As noted, bargaining theory predicts that the acquisition of cruise missiles would likely reduce the observed incidence of warfare between states as one side gains a bargaining advantage (Blainey 1988; Fearon 1995). However, in this research, I propose the effect that cruise missiles has on state behavior operates at a lower level of conflict. States seek to coerce their adversaries diplomatically in pursuit of policy goals with the use of the least amount of force possible. Though I included incidents of large-scale warfare in my analysis, I did not distinguish between this and conflict short of war, thereby aggregating uses of force. This perspective is not only congruent with coercion theory, but follows closely with Lieber's (2005) concept of technological opportunism which asserts that weapon technology neither mitigates or produces war, it is a means by which states pursue their policies.

In addition, I do not code or test for every use of the cruise missile throughout its short history. Currently there are no data sets available that consolidate this information, and collecting it poses a significant data collection challenge due to governmental secrecy and operational opacity. Instead, I examine the role of cruise missiles in making force initiation generally more likely. In the theory advanced below, cruise missiles serve to facilitate a broader coercive strategy. For instance, though they played a role in the 1982 Falkland Conflict by increasing the likelihood Argentina would attempt to recapture the disputed Falkland Islands by force (see Chapter Four), the Exocet cruise missiles were not used until later in the conflict. Their presence increased the prospect of force initiation, even though they had little utility in the initial military assault.

Another limitation to this research is that I am only interested in determining whether a state's possession of cruise missiles increases the probability of using force. I do not attempt to predict their conditions for use other than to note that the use of cruise missiles in coercive situations would likely come in extreme cases, when a state either lacks or has extinguished other, less belligerent, forms of coercion. However, as demonstrated in Chapter Three, states armed with cruise missiles are more likely to threaten or display force than those that are not so armed.

This research does not focus on the conditions under which a state is likely to procure cruise missiles. As Deutch (1992) notes, "the fundamental motivation to seek a weapon is the perception that national security will be improved." (124-125). Regardless of how or why states obtain cruise missiles – which can be voluminous – aside from their use as model predictors in Chapter Three, this dissertation does not delve into why or

under what conditions a state may obtain them. For an excellent treatments of this topic, reference Gormley (2008b) and Carus (1990, 1992).

Finally, this dissertation does not advocate for any particular policy prescription. Although evidence indicates that the acquisition of cruise missile technology may pose a threat to international security through increased likelihood that a state will threaten, display, or use military force, policymakers must weigh all available information to determine if stricter international agreements need to be put in place to curb the cruise missile's proliferation. Furthermore, this research does not test for the effectiveness of cruise missiles as coercive tools, nor test coercion theory itself. Instead, I only attempt to empirically determine if states are more likely to initiate military force while in possession of cruise missiles. Although an important question, the role of limited force using cruise missiles as an effective means of coercion is beyond the scope of this dissertation.

Roadmap of the Dissertation

The central thrust of this dissertation attempts to answer the question of whether cruise missile possession increases the chance a state will initiate the use of military force. To answer this question, three central hypotheses guide this research. First, I predict that states armed with cruise missiles are more likely to exercise military force to coerce their adversaries than states that do not have cruise missiles. Second, I postulate that states armed with cruise missiles are more likely to initiate crises through threats and displays of force than states that do not have cruise missiles. Finally, I posit a null hypothesis which predicts that there is no difference between the probability that

democratic or autocratic states with cruise missiles will use military power to achieve foreign policy objectives.

I test these hypotheses over the course of the next five chapters. Chapter Two tackles two objectives. First, I discuss the relevant literature. Second, I present a theoretical framework built around coercive diplomacy. Chapter Three outlines the explanatory sequential mixed method design used to guide my research methodology and presents the results of the quantitative data analysis. Chapters Four and Five present explanatory case studies to illustrate the conclusions from Chapter Three. The first case study examines the 1982 Falkland Conflict and the second examines the United States' use of cruise missiles as a coercive tool in the 1990s.⁹ Finally, Chapter Six not only summarizes the project's research findings, but also integrates the quantitative and qualitative strands of the mixed method research. Each of these chapters was essential to completing this research. I briefly introduce the chapters in more detail below.

Chapter Two establishes a foundation for this dissertation. Here, I present the current line of research for my primary dependent variable, the use of military force, and my dependent variable, cruise missile possession. The literature review demonstrates that although the literature examining various state characteristics found to correlate with the likelihood of initiating military force is robust, little of this literature specifically examined the role of individual weapons or classes of weapons. The cruise missile literature corroborates this verdict. Much of the cruise missile literature focuses on capability and proliferation, but lacks a systematic empirical investigation of the cruise

⁹ The Falklands Conflict is alternately referred to as the South Atlantic Conflict, Malvinas War, the Falklands War, the Falklands Crisis, or the Falklands Crisis. For consistency, I use the term Falklands Conflict.

missile's influence on state behavior. In addition to the literature review, Chapter Two offers a theoretical framework for understanding how cruise missiles influence state behavior. Centered around coercion theory, this theoretical framework guides us toward a theory of cruise missile-armed state behavior that supposes states use cruise missiles as a low-cost means of coercion. To test this theory's efficacy, I present three hypotheses as noted above.

Chapter Three accomplishes two goals. First, I present details of the explanatory sequential mixed method design used to systematically test the validity of my hypotheses. I use two strands of inquiry. The first strand quantitatively tests each hypothesis using original data set of cruise missile procurement integrated with data derived from the Militarized Interstate Dispute data set (Palmer et al. 2015) and the International Crisis Behavior data set (Brecher et al. 2017). The second strand illustrates these results using two case studies identified from the quantitative analysis. The second goal of Chapter Three is to present the results of the quantitative strand of research. I not only uncover significant empirical support for all three hypotheses, but also note evidence that land attack cruise missiles, when analyzed separately, impart their own influence on the propensity to use military force.

Chapter Four presents the first of two illustrative case studies. Using primary, secondary, and tertiary sources derived from recently declassified documents, scholarly analysis, and first-hand accounts, I demonstrate that the Exocet cruise missiles used in the 1982 Falkland Conflict played a greater role than previously understood. Seen through the lens of coercion, I assert that the Argentine government believed the anti-access/area denial (A2/AD) capabilities provided by the Exocet would be an effective hedge against

British attempts to recapture the islands, especially as they misperceived waning British interest in this far-flung southern outpost. Armed with newly acquired and operational air-launched anti-ship cruise missiles, Argentina dispensed with 150 years of non-aggression and took the Falkland Islands by force in 1982. In response, and perhaps influenced by British misperceptions of Argentina's A2/AD capability, the United Kingdom dispatched a fleet to retake the islands. But, the five Exocets in Argentina's inventory proved to be formidable denial weapons. Argentina's limited number of Exocet missiles wreaked havoc on the British fleet, forcing the navy to restructure their strategy by forcing the fleet to move beyond the range of Argentine aircraft. However, the Exocets were ultimately not enough to prevent the British from recapturing the islands.

Chapter Five presents the second illustrative case study examining American "cruise missile diplomacy" in the 1990s. Here, I demonstrate that after the 1991 Gulf War, the Tomahawk land attack cruise missile stood out as a promising means to attack an adversary at a low cost. No longer limited by the poor navigation and propulsion technology that hindered earlier cruise missile models, the Tomahawk could go beyond its Cold War nuclear mission to precisely inflict limited punishment in a way that allowed the United States to use credible force to back up threats and inflict punishment in coercive situations at a reduced political and material cost.

I conclude the dissertation in Chapter Six by reviewing the results of hypothesis testing and completing the third strand of this mixed method investigation through the integration and interpretation of the quantitative and qualitative phases of research. I note that not only do the illustrative case studies support all three hypotheses, but aptly

complement the results of the statistical analysis in Chapter Three. I conclude the chapter with a final discussion of the findings, recommendations for future research in the context of a broader program of study, and my thoughts on this research's implications on future government policy.

CHAPTER TWO: LITERATURE AND THEORY

The purpose of this research is to examine the relationship between a state's possession of cruise missiles and its likelihood of initiating a militarized interstate dispute. To lay the groundwork for this investigation, this chapter reviews the relevant literature, presents a theoretical framework for understanding why cruise missiles would increase this likelihood, and suggests three hypotheses for testing the relationship. The chapter opens by discussing some of the reasons a state would use military force to pursue its foreign policy objectives. I follow this discussion with a review of the extant literature on cruise missile capability, mission, and utility. After establishing a foundation, I employ a theoretical framework – built on coercion theory – to understand why cruise missiles may influence state behavior. I propose that cruise missiles increase the chance a state will threaten, display, and apply military force in situations where force is otherwise less likely by providing a qualitatively different capability than that of other weapons. In coercive situations in which the use of force is otherwise held in reserve, cruise missiles provide an acceptable means to signal resolve, compel the enemy to reverse an action, punish transgressions, and deny an adversary's objectives.

To explain how the extant literature informs this research, I examine two core themes in the literature. The first theme is related to this research's dependent variable, the initiation of military force. For this literature review, I reflect on the common correlates that scholars used to explain why states initiate military force. I also examine the relatively limited cruise missile literature to survey the existing state of the art in this niche field. Since the 1980s, scholars understood the cruise missile's qualitatively different capabilities and sought to realize their place in a state's defense strategy and

international security. I build on this literature with the first empirical examination of the cruise missile's effect on state behavior.

In Chapter One, I introduced a new schema for understanding the cruise missile's historical utility by typifying three phases of cruise missile development, largely based on the American cruise missile program's experience, that demarcate the weapon's place in military doctrine.¹⁰ The first phase, from World War I through World War II, was characterized by immature technology, delicate airframes, and woeful unreliability. The second phase, ranging from the end of World War II until 1970, showed a marked improvement in reliability, destructive capacity, and range. Finally, the third, and current, phase of cruise missile development sees significant advancements in navigation and targeting. Newfound accuracy permits a switch from nuclear, close enough, targeting to conventional precision munitions, which in turn allows for a wider use in a coercive strategy. These modern cruise missiles reduce the need to commit combat troops in coercive situations that call for an exemplary use of force, increasing the likelihood a state will initiate a limited conflict.

Building on the military force initiation and cruise missile literatures I present a theoretical framework for this research using coercive diplomacy. Coercive diplomacy explains why states may use threats, displays, or limited uses of force to pursue their foreign policy objectives. Using the existing coercion literature, I postulate that cruise missiles increase the likelihood a state will act belligerently by providing a qualitatively different solution to foreign policy challenges. Cruise missiles provide the capability to inflict controlled and limited damage which can be used either exclusively, in

¹⁰ I explore this schema in more detail in Appendix A.

combination, or to compliment other belligerent actions without cruise missiles themselves. Not only may this lead to an increased probability of force, but also an increased frequency of threats and displays of force. Moreover, this effect may be independent of regime type: Democracies and autocracies are likely to enjoy the cruise missile's coercive properties equally. Empirical tests in Chapter Three, combined with case studies in Chapters Four and Five, support these hypotheses.

Correlates of Military Force

In this section, I present a review of the literature encompassing seven correlates of military force initiation: regime type and age, wealth, alliances, territorial contiguity, revisionism, and armaments. I propose that cruise missiles increase the likelihood a state will use military force. However, I do not suggest cruise missiles necessarily increase the incidence or severity of full-scale war.

This literature review does not include scholarship that explains why states engage in large-scale conflict (i.e. war) such as the security dilemma (Herz 1950), offense-defense theory (Jervis 1978), expected utility theory (Bueno de Mesquita 1980), prospect theory (Kahneman and Tversky 1979), and hegemonic war theory (Gilpin 1981). The reason for this can be found in bargaining theory, which suggests an increase in military capability on one side of a dispute should drive the defending side to the negotiating table (Blainey 1988; Fearon 1995). When attacking becomes easier for one side, the stakes shift, leaving the defender to question whether it is worth resisting. In that circumstance, risks and costs increase, or states may push for a deal early in hope of a more acceptable resolution. Although cruise missiles may increase the likelihood a

state may initiate military force, bargaining theory suggests, all else equal, they should not necessarily increase the probability of war. Rather, their use as a coercive tool for limited force may best be understood in terms of limiting, rather than escalating, the risk of war under terms that are politically acceptable to the state and its regime.

Military Force and Conflict

To begin the literature review, it is useful first to engage the concept of using military force as initiating a militarized interstate dispute (MID) or conflict. A MID may occur in the context of an international crisis in which the “actors involved are willing or forced to make a trade-off between highly valued but mutually incompatible objectives ... involving a rapid and acute change in the perception of threats and promises for each [participant].” (Maoz 1982, 219) For these purposes, I use Jones, Bremer, and Singer’s (1996) definition of a MID, which distinguishes these types of disputes as “united historical cases in which the threat, display or use of military force short of war by one member state is explicitly directed towards the government, official representatives, official forces, property, or territory of another state.” (168) States display force to indicate a commitment that they will take to arms should their demands not be met with satisfaction (Slantchev 2005).

Inquiry into the forces behind initiation of such disputes is not new to the scholarly community. To grapple with the causal mechanisms currently understood – despite some debate – to influence the initiation of a dispute, and to illustrate where cruise missiles fit into this discussion, I present a brief review of the scholarly literature behind the initiation of threats, displays, or uses of limited military force. As the following discussion will highlight, there are seven correlates believed to influence MID

initiation. These aspects include regime type and age, wealth, alliances, territorial contiguity, revisionism, and weapon acquisition. Much has been accomplished in this field, but little research has been completed on the effects of specific qualitatively different weapon systems on MID initiation. This research seeks to fill that gap by connecting the literature on MID initiation with the literature on cruise missile threats.

Regime Type

Some scholars assert that domestic factors specific to regime type influence whether a state will initiate a MID. This line of research is well-sown ground. Some assert that regime type itself is associated with conflict. One branch contends that authoritarian regimes are most associated with MID initiation. A dispute may not involve military force, yet non-democratic regimes may be more likely to first use force when involved in a situation in which states are engaged in threats and displays of force (Caprioli and Trumbore 2006). The link between autocracies and dispute initiation may involve the autocratization process itself as new regimes may breed reckless foreign relations when attempting to preserve political structures (Enterline 1998; Lai and Slater 2006; Mansfield and Snyder 1995).

Peceny, Beer, and Sanchez-Terry (2002) argued that the type of authoritarian regime matters. Military and personalist regimes as categorized by Geddes (1999), behave relatively peacefully toward one another, while single-party regimes experience greater rates of conflict. This may be due in part to being less casualty or risk averse (Sirin and Koch 2015). Some researchers have argued that over time and as personalist autocrats age, they become more capable of navigating difficult foreign policy situations and therefore become likely to initiate disputes (Michael Horowitz, McDermott, and

Stam 2005). Lai and Slater (2006), Debs and Goemans (2010), and Weeks (2012) concluded that military autocracies were more likely to use military force to pursue foreign policy goals. However, Kim (2017) challenged the notion that military regimes were inherently hostile. Instead, they are the product of hostile security environments. Such environments lend themselves to a greater probability of militarized disputes.

Authoritarian regimes may initiate a MID because of their greater vulnerability to coups. Panel (2017) asserted that a dictator's risk of being violently removed from power can be a strong predictor of dispute initiation. When faced with possible removal from office, prison, and possibly execution, an autocrat may decide that initiating a conflict is worth the risk of losing the conflict (Debs and Goemans 2010). Finally, the correlation between regime type and MID initiation is not exclusive to authoritarian regimes. Instead, the correlation may depend on regime type dyadic pairing. When paired, democracy and personalist dyads are more likely to experience a MID, although personalist regimes are more likely to initiate a dispute even when less likely to prevail (Peceny, Beer, and Sanchez-Terry 2002; Reiter and Stam 2003). Interestingly, so-called rogue states are no more likely to initiate or be involved in international conflict than are non-rogue states (Caprioli and Trumbore 2006).

Others claimed that democratic forms of government are significantly correlated with MID initiations. Maoz and Russett (1993) argued that democracies are just as

conflict-prone as autocracies, but rarely clash with one another.¹¹ Maoz and Abdolali (1989) believed that democracies are as prone to disputes as autocracies, but disputes are disproportionately initiated by other regime types. Although less likely to initiate large-scale conflicts, democracies may be quicker to enter low-level conflicts but slower to escalate to war. When they do enter disputes, which have become less severe and shorter over time, democracies tend to be on the same side of the conflict (Mitchell and Prins 1999; Mousseau 1997).¹² Dixon (1994) asserted that democracies are better equipped to reach diplomatic settlements than are autocracies. Therefore, they should see fewer incidents of conflict initiation, commensurate with democratic peace theory. A strong explanation in the literature for the disparity between democracies' and autocracies' propensities to initiate a MID is the difference in audience costs for each regime type.

Variation in domestic social and institutional constraints in a regime may predict the chance a state will engage in conflict (J. L. P. Weeks 2012, 2014). Democratic governments face consequences for their decisions in terms of audience costs, which can signal commitment and credibility to adversaries (Fearon 1994b; A. Smith 1998).

Audience costs are the political costs associated with a leader's decision, and when this

¹¹ The theory that democracies tend to avoid fighting one another, democratic peace theory, has a long tradition in the literature, and is outside the scope of this research. For more on democratic peace see Kant (1796), Babst (1964), Doyle (1983b, 1983a, 1986, 2005), Maoz and Russett (1993), Russett (1990, 1993), Owen (1994), Russett, Layne, Spiro, and Doyle (1995), Maoz (1997, 1998), Gartzke (1998), Bueno de Mesquita, Morrow, Siverson, and Smith (1999), Hensel, Goertz, and Diehl (2000), Cavallar (2001), Slantchev, Alexandrova, and Gartzke (2005), and Hobson (2011). For skeptical perspectives on democratic peace theory see Layne (1994), Gowa (1999), Rosato (2003, 2005), Macmillan (2004), Gat (2005), and Tarzi (2007).

¹² Mitchell and Prins (1999) found that most MIDs between democracies involve relatively benign matters such as fishing rights, maritime boundaries, and ocean resources.

decision relates to initiating a militarized dispute, these costs can have a significant impact on the decision to use force. Democratic leaders who respect these constraints initiate disputes less frequently, while those who challenge these constraints tend to be more aggressive, initiating disputes more often (Keller 2005; Keller and Foster 2012). As a crisis escalates, audience costs can become a more powerful influence than the costs of concession. Audience costs may force action, even if the action is ultimately undesirable (Fearon 1994a). They may be measured in terms of threats posed by the electorate's ability to remove or sanction a leader because of unpopular policy (Slantchev 2006a). In democracies, favorable policy outcomes can be a measurement of a leader's quality in the eyes of the electorate. If a leader's policy position displeases the voting public, the leader can be removed from office. Dynamic political processes resulting from an engaged electorate constrain a democratic leader's ability to initiate conflict by signaling the viability of threats (D. H. Clark and Nordstrom 2005; Fearon 1994a, 1994b). When making threats, a leader's position may therefore only be credible if they risk removal from office for not fulfilling the threat or commitment; this will increase the chances of MID initiation if hawkish policies must be carried to fruition (Fearon 1994a; Partell and Palmer 1999; Slantchev 2011; A. Smith 1998). The public does not always assert a pacifying effect on the state, however. If the population has a reason for revenge, popular support for action can generate or even force a MID initiation (Stein 2015).

One way the public directly holds sway over a democratically elected leader is through elections. Gaubatz (1991) found that when elections are imminent, leaders are more constrained in their ability to initiate conflict. Leaders are more likely to initiate a MID earlier in office when they are less electorally vulnerable. The media plays a

powerful role in this process. As a conduit of information, the media can have an ameliorating effect on public opinion. Increased media openness is negatively correlated with MID initiation and fatalities in a crisis, by complementing neo-Kantian peace factors such as institutional democracy, economic interdependence, and membership in international organizations (Choi and James 2007; B. Russett, Oneal, and Davis 1998).

In the United States, presidential decisions to use force in limited engagements, which are essentially political uses of force, are based more on domestic and personal or political factors than international ones (Ostrom and Job 1986). James and Oneal (1991) and Meernik (2001) agreed that domestic and political factors are important, but they noted the severity of international crises play a more important role than Ostrom and Job asserted. In the United States, support for military operations is affected by the willingness to accept casualties, which in turn is based upon the public's weighing of the costs versus the benefits of the situation, and the degree of consensus among political leaders (Larson 1996; T. C. Morgan and Campbell 1991). Leeds and Davis (1997), however, challenged the relationship between constraining domestic political considerations and international behavior. They concluded that leaders who are vulnerable simply have fewer international demands made on them, decreasing the likelihood they will become entangled in disputes. Finally, constraints imposed by the legislative branch during periods of economic decline may compel the president to pursue other means of shoring up support, including the use of force (Brulé 2006).

Regardless of regime type, one course of action any leader may pursue to shore up popular support is the initiation of a militarized dispute. Ostrom and Job (1986) and Miller (1995) noted that domestic political structures and resources condition leaders to

use conflict as a means to manipulate domestic audiences and increase political popularity. Diversionary theory is a line of research that tracks a leader's use of "foreign conflict involvement to divert domestic attention from internal problems." (R. A. Miller 1995, 761). A diversionary use of force may be more likely in environments characterized by strategic rivalries. Given their reliance on electoral support (i.e. audience costs), democracies arguably have the greatest incentive to use diversionary force. However, the transparency inherent in most democratic regimes leaves them little opportunity to do so (Mitchell and Prins 2004). Morgan and Anderson (1999) observed that diversionary theory, tested empirically primarily using data on the United States, is also supported using data from the United Kingdom. They asserted that public support for the British government is positively correlated with the likelihood the government will use threats, displays, or use of force abroad. Challenging this thesis, Sirin (2011) argued that rather than divert attention away from domestic problems, political leaders may use force abroad to build cohesion during time of domestic unrest and violence.

In Chapter Four, I explore a classic case of diversionary conflict. The 1982 Falkland Crisis is often regarded as the product of a faltering military junta trying to drum up domestic support in the face of civil unrest and economic trouble (e.g. Levy and Vakili 1992; R. A. Miller and Elgün 2011; Oakes 2006). However, I take a novel perspective by arguing that while the aforementioned factors are valid, cruise missiles

increased the prospect Argentina would act to reclaim the Falkland Islands by providing a capability that offered to lower the risk of a significant British military response.¹³

Regime Age

Other scholars argue that a regime's age has a significant influence on the initiation of a state's next MID. The connection between a regime's age and conflict frequently appears in the MID initiation literature as a regime-based independent variable. For instance, an early study of autocratic leadership tenure and conflict argued that autocrats are more likely to wage war later in their tenure due to reduced audience costs (i.e. electoral punishment for costly foreign policies) noting "the longer an authoritarian leader has been in power, the higher the probability that the leader will risk waging a war, including waging a war that ultimately is lost" (Bueno de Mesquita et al. 2003, 847). Bak (2017) conceded that autocratic insecurity may be a source of foreign policy constraint, but challenged Bueno de Mesquita et al.'s linear conclusion. Instead, Bak argued that over the course of an autocratic leader's tenure, the likelihood of crisis initiation is greater in the early and late years of the regime, during periods of early and late instability as leaders first consolidate their hold on political office, and they turn attention toward maintaining power.

Scholars do not limit this phenomenon to autocratic leaders. Both new autocratic and democratic leaders are more likely to be targets of aggression from foreign powers

¹³ Though considered by some a classical use of a diversionary use of force (Levy and Vakili 1992; Oakes 2006), not all agree diversionary theory explains the Falkland Conflict. Fravel (2010) argued that standard realist models of international behavior and coercive diplomacy offer better explanations. For more on diversionary theory see Meernik and Waterman (1996), Miller (1999), DeRouen (2000), Hendrickson (2002a), Oneal and Tir (2006), Tarar (2006), Jung (2014), and Blomdahl (2015).

due to their inexperience. A new leader may value concessions over entering a new conflict with little experience (Gelpi and Grieco 2001). It stands to reason, then, that as democratic leaders age, they are more likely to initiate a MID as they become more comfortable as leaders and gain the confidence needed to enforce their foreign policies (Michael Horowitz, McDermott, and Stam 2005). Potter (2007) challenged this conclusion when applied to the United States. Potter argued that as a president gains time in office, the probability of a crisis involving the United States declines as increasingly skilled presidents are better able to avoid MIDs and find diplomatic solutions to foreign policy challenges.

Wealth and Status

Factors unrelated to regime type and domestic concerns may also drive the initiation of militarized disputes. Wealthier states have greater capability and capacity to use threats and force and so may initiate disputes more often. Boulding (1962), Bremer (1980, 1992), and Schultz (2001) believed that state wealth is a significant predictor of dispute involvement. States with high material capability and generous resources can predict if a state has a greater likelihood of initiating a MID, often defining their interests globally with military resources to pursue their policies. This position aligns with Fearon's (1994b) assertion that threats are more likely to work when the threatening state is favored by the balance of capabilities or interests. The greater the military capability, the greater the power in realist terms, and therefore the reliability of the threat (Jervis 1994; Morgenthau 1948; Waltz 1979).

The relationship between state economic development and MID propensity may be non-linear. Impoverished and wealthy states are less likely to initiate MIDs. States at

an intermediate level of wealth have the opportunity and willingness to make contentious territorial claims and policy assertions. Poorer states lack opportunity and resources while wealthy states rely more on service-based economies and are more invested in international economic relations, making territorial expansion less imperative (Boehmer and Sobek 2005). Strüver and Wegenast (2018) provided an example of the connection between wealth and risk of MID initiation. They asserted that extreme oil abundance or dependence is significantly associated with an increased risk of MID initiation. Oil rich states also have an increased risk of being the target of conflict while large oil deposits are found to be correlated with an increase in conflict intensity overall.

In addition to wealth, major power status may also affect whether a state will initiate or be involved in a militarized interstate dispute. Volgy et al. (2011) provided a framework for understanding and classifying major power status by adapting Levy's (1983) conceptual approach. Volgy et al.'s (2011) definition is below. There is a distinction between being a major power and being recognized as a major power by other states.

A state is a *major power* if it (a) has unusual capabilities with which to pursue its interests in interstate relations; (b) uses those capabilities to pursue unusually broad and expansive foreign policies beyond its immediate neighborhood or region; and (c) seeks to influence the course of international affairs relatively independently of other major powers. A state is *attributed major power status* if it is perceived by policy makers of other states within the international community as being unusually powerful and willing to influence the course of global affairs, and if they act toward it consistent with that perception. [emphasis in original] (Volgy et al. 2011, 6)

Major powers often possess power projection capabilities which enable them to define their interests globally. This broader scope of international concern and involvement increases the opportunity to become involved in conflicts (Schultz 2001,

2013). It is no wonder that there is a general consensus among scholars that the most powerful states tend to be the most conflict prone (Bremer 1980; Eberwein 1982; Gochman and Maoz 1984; Rosenau and Hoggard 1974). Gochman and Maoz (1984) contended that major powers, due to perceptions of global responsibility and enduring rivalries, most often initiate or join ongoing disputes, whereas minor powers may also be initiators, but are more likely targets. Because major powers often have higher domestic political constraints on executive decision making, they may initiate military conflict less frequently than do minor powers, who are less constrained (T. C. Morgan and Campbell 1991). Minor powers may, however, be more likely to initiate violent force in a MID, whereas major powers tend to resist escalation in the interest of maintaining the status quo (Caprioli and Trumbore 2006; K. Rasler and Thompson 1999; B. Russett and Oneal 2001).

Alliances

The MID initiation literature also addresses the effects of alliance membership or participation in international organizations on whether a state may become involved in a militarized dispute. Alliances may affect the probability a challenger will initiate a dispute because they often signal whether other states will intervene in the conflict. The type of alliance matters. Alliances that require intervention on behalf of the defender reduce the probability of MID initiation, while alliances that support a challenger or promise non-intervention increase that likelihood (Leeds 2003). Additionally, Gochman and Maoz (1984) found that states who initiate, or are targets, of MIDs most often join ongoing disputes, usually on the target's side. Mintz, Russett, and Leeds (2005) showed that when disputing states have allies who agree to help during a conflict, they tend to

receive help in any emerging situation. Agreements of this type affect dispute expansion to other states which can escalate the scope of the conflict. Finally, Shannon, Morey, and Boehmke (2010) warned that membership in international organizations may not reduce the conflict initiation, but may reduce conflict duration by helping each side overcome bargaining obstacles and information deficiencies, thus allowing for quicker agreements between the parties.

Territorial Contiguity

In addition to regime type, wealth, major power status, and alliances, proximity and territorial contiguity is correlated with MID initiation. Territorial contiguity can itself be a source of conflict as states vie for resources or maneuver to settle disagreements over borders. These events increase the probability of MID initiation and risking expansion of the dispute to nearby states (Bremer 1992; Diehl 1985; Hensel 2000; Hill 1945; Joyce and Braithwaite 2013; Luard 1986; Vasquez 1993, 1995, 2009; Vasquez and Henahan 2001; Wallensteen 1981). Not only may territorial disagreements lead to fighting between neighbors (Diehl 1992; Diehl and Goertz 1988, 2002; Goertz and Diehl 1988; K. J. Holsti 1991; Vasquez 1995), but territorial conflicts tend to produce a greater likelihood the conflict will resume after settlements are reached, as the belligerent parties seek either revenge or stalemate (Hensel 1994; Maoz 1984).

Contiguity may be important to conflict, but most MIDs between neighbors involve commercial interests like fishing grounds or natural resources. Because democracies, as previously noted, are generally better equipped to resolve differences due to their open nature (Dixon 1994), they are less likely to allow contentious territorial disputes to escalate to the level of a MID. Democracies normally rely on diplomatic

means to resolve their issues (Mitchell and Prins 1999). Rasler and Thompson (2006) disagreed, however, that territorial disputes alone invite MID initiation. They asserted that when territory, contiguity, and strategic rivalry become an interconnected, rather than linear, issue, MID initiation is likely. A simple rivalry is not a sufficient cause.

Territorial issues can act as vehicles that ignite underlying rivalries into military action, particularly when the disputed territory has strategic or ethnic value (Wiegand 2011).

Senese (1996) found that contiguity and territorial issues are significantly more likely to escalate than disputes that are non-territorial. In addition, the salience of the territorial issue is positively correlated with the number of battle deaths. Senese also contended that at lower levels, including displays and threats of force, contiguity plays a small role in escalation. Senese posited that leaders are no more likely to escalate a commitment to conflict with neighboring opponents using threats. Leaders may seek to maximize staying in power while pursuing national security goals, integrating domestic and international factors. Seeking to resolve territorial disputes invites domestic unrest, but engaging can also divert attention from domestic problems. Thus, domestic politics can initiate, exacerbate, and perpetuate territorial disputes, especially in strategic territories rich in natural resources (Huth 1996).

Revisionist Powers

The presence of a revisionist power in a dyadic system may increase the rate of conflict (Caprioli and Trumbore 2006; J. S. Gowa 1999; Lemke and Reed 2001; Schweller 1994). A revisionist state is one which is “dissatisfied with the existing status quo prior to the onset of a militarized interstate dispute” (D. M. Jones, Bremer, and Singer 1996, 178). A revisionist state seeks a change in the status quo, often engaging in

behavior that may be considered aggressive and threatening to peace, although without necessarily resorting to full scale war (Claude 1988; Stoll 1998). When faced with the dilemma of preventive attack in the face of uncertainty, declining powers may choose to attack, especially when the adversary's motivations and capabilities are unknown (Debs and Monteiro 2014; Huth, Bennett, and Gelpi 1992; R. Powell 1991, 1996b, 1996a, 1999, 2002, 2012). Schweller (1994) noted that expansionist powers attract weaker states as bandwagoning partners that are eager to enjoy spoils, and to weaken a declining power. Jungblut and Stoll (2002) discovered a connection between conflictive interactions, or "the presence of a conflict below the levels at which military force is used," (527) and the chances of MID initiation. Conflictive interactions may include trade disputes that contribute to greater levels of conflict between nations. Peterson and Drury (2011) built on Jungblut and Stoll's work. They noted that states that impose economic sanctions upon other states to coerce concessions may inadvertently lower prohibitions against using violence against the sanctioned state. Such actions open the door to MID initiation for third party states.

Revisionism at the sub-state level may also affect MID initiation. States that experience civil wars may be more likely to become involved in MIDs with other states due to the issues surrounding the causes of the civil war: intervention, externalization, and spillover effects which induce international friction (Diehl and Goertz 2002; Gleditsch, Salehyan, and Schultz 2008; Salehyan 2008). Trumbore (2003) observed states experiencing ethnic rebellion are more likely to initiate a MID. The higher the level of rebellion, argued Trumbore, the more likely a state will use force first in an international dispute. However, states struggling with ethnic rebellion are much less

likely to be the victims of attack from other states as bystander states place a greater emphasis on ethnic rescue than violence (Van Evera 1994).

Armaments

Finally, the literature addressing the effects of specific armaments on MID initiations is mixed. One body of literature focuses on how arms transfers affect conflict. Some argue arms transfers increase military conflict, as increased capabilities on the part of the receiver embolden more assertive foreign policies and increase the domestic audience's expectations (Craft 1999; Craft and Smaldone 2002; Intriligator and Brito 1984; Kinsella 1994, 1995, 2014; Kinsella and Tillema 1995; Mayer 1986; Schrodt 1983). Sylvan (1976) noted that not only do arms transfers predict increased conflict and decreased cooperation, but that there is a statistically significant two year lag in the time between receiving assistance and initiating conflict. Krause (2004) contended that arms transfers outside defense pacts from major powers disrupt information asymmetries, making arms recipients more likely to experience MIDs as either target or initiator.

Not all scholars agree, however, that arms transfers predict MID initiation. For instance, Durch (2001) contended that arms transfers do not explain MID initiation. According to Durch, underlying political factors and security dilemmas bear responsibility for the correlation between arms transfers and conflict. Additionally, Diehl and Kingston (1987) argued that military buildups are poor predictors of future conflict involvement. Arms increases among rivals do not make the rivals more likely to initiate threats or use military force; states increase arms in anticipation of impending conflict.

The shift in the international order brought about by arms transfers and changes in relative power could also increase the likelihood of armed conflict (Gilpin 1981, 1988;

Morgenthau 1948; Wagner 1994). Bas and Coe (2012) argued that the procurement of new military technology can quickly shift the balance of power. This shift can instigate armed conflict, particularly in cases where technology is advanced and adversarial states do not yet possess equal capability. Even the anticipated transfer of advanced military technology can influence the weaker state to take preemptive action against its adversaries. The cruise missile's ability to fly undetected and carry a diverse payload presents just such a destabilizing threat, creating an artificial parity between what should otherwise be militarily mismatched rivals (Dutra 2004). This disparity may increase the possibility a declining power could attack a rising power to maintain dominance or parity. This leads to a general question: Do specific weapons make MID initiation more likely?

How weapon systems affect MID initiation directly informs the research I present here. The connection between the possession of advanced weapons, and the consequences for international security has a solid place in the literature. With few exceptions, however, much of the scholarship on this subject has focused on nuclear weapons. Some argued that nuclear weapons embolden states to act more belligerently (Feaver 1992, 1994; Jervis 1976; Sagan 1985, 1993, 1994). Other scholars predicted that nuclear weapons suppress large scale conflict, making states more willing to initiate disputes at lower levels, a stability-instability paradox (Ganguly and Wagner 2004; Kapur 2003; Rauchhaus 2009; Snyder 1965). Narang and Mehta (2017) claimed that in extended deterrence situations, wherein a client state with no nuclear weapons of its own is protected by an ally's nuclear umbrella, the client state has an increased risk of initiating a MID with the expectation of receiving concessions from its target. Suri (2008) noted that nuclear weapons produced peace through deterrence during the Cold

War, but found that while these weapons prevented large scale conflict, they ironically created the perfect conditions for small scale conflict by muzzling major powers' ability to fully engage in conflict mitigation between states on the global periphery. Rauchhaus (2009) agreed, noting that in asymmetrical nuclear relationships, the chances of military conflict increases while symmetrical nuclear relationships decrease conflict. Horowitz (2009) noted that a state's experience with nuclear weapons affects the likelihood of MID initiation. New nuclear states are more willing to leverage their nuclear weapons in a dispute. They are more likely to reciprocate a MID, but as the state matures, this reciprocity happens less frequently suggesting that states learn how to reconcile challenges and nuclear weapon possession.

Not all scholars agree that nuclear weapons increase conflict. Some argue nuclear weapons have a cooling effect, shifting demands and limiting risks associated with military aggression as states avoid escalation, the essence of deterrence theory and the nuclear taboo (Gaddis 1986; Jervis 1989b; T. V. Paul 1995; R. Powell 1988, 1990; Schelling 2008; Snyder and Diesing 1977; Tannenwald 1999; Waltz 1981, 1990). Asal and Beardsley (2007) and Beardsley and Asal (2009) alleged that not only do nuclear weapons have little effect on overall crisis occurrence, but adversaries involved in a crisis will show more restraint when the participants possess nuclear weapons. Gartzke and Jo (2009) and Bell and Miller (2015) found no significant relationship either way. They argued that when pre-nuclear conflict is controlled, nuclear dyads are not significantly more or less likely to fight wars, or more or less likely to initiate lower levels of conflict. Bell and Miller qualified their conclusion by noting that expanded global interests that

invariably come with being a nuclear-armed state increases the likelihood of initiating a dispute against new, non-nuclear, adversaries.

Some scholars have sought to understand how conventional weapons affect the probability a state will initiate a MID, with direct applications to the research at hand. Horowitz, Kreps, and Fuhrmann (2016) showed that remotely piloted aircraft (aka drones or RPAs) “lower the cost of using force by eliminating the risk that pilots will be killed, making some states – especially democracies, which may be especially casualty sensitive – more likely to carry out targeted attacks against suspected militants.” (9) However, they noted that aside from specific utility as a counterterror weapon or means of authoritarian control, RPAs do not significantly influence interstate relations. Fordham (2004) empirically demonstrated that military capabilities influence the decision to use force in ways which may predispose a state to use force. Fordham showed weapons that provide advanced military capabilities can offer the decision maker a greater number of military options. He tested this concept by examining American military expenditures with incidents in which the United States used force. He affirmed evidence supporting the argument that increases in military capability may make the United States more likely to use force. Other researchers have argued that offensive maneuver strategies, rather than specific capabilities, are the primary drivers for initiating a militarized dispute; the weapons themselves are secondary (Mearsheimer 1983; Reiter 1999).

Finally, Mettler and Reiter (2013) examined the relationship between ballistic missile proliferation and interstate conflict. The question of whether ballistic missiles increase the prospect of conflict directly informs the question of whether cruise missiles influence state behavior. Mettler and Reiter empirically demonstrated that states armed

with ballistic missiles are 266 percent more likely to initiate crisis than those without. However, when nuclear weapons are included in a state's force structure, the opposite is true. States armed with both nuclear weapons and ballistic missiles are less likely to be involved in conflict.

This discussion reviewed the existing literature applicable to this research's dependent variable, the initiation of military force. The literature informs what we think about reasons states initiate militarized disputes. In sum, states threaten and use force to achieve their political goals depending on regime type and age, wealth, alliances, territorial contiguity, revisionism, and the influence of arms transfers and weapons. Scholars such as Mettler and Reiter (2013) and Horowitz, Kreps, and Fuhrmann (2016) have tested the effects of particular weapons on the initiation of militarized disputes, yet few have ventured beyond the nuclear discussion to perform a systematic investigation of other weapon systems' effects on conflict. In the next section, I examine the current literature that helps us understand the threat posed by cruise missiles.

The Cruise Missile Literature

My research adds to the MID initiation body of literature by providing a pioneering empirical mixed method test of the cruise missile's effect on the initiation of military force and crises. The existing relevant scholarship on cruise missiles peaked in the 1990s as improved navigational systems, such as satellite navigation, and the paradigm of a revolution in military affairs, transformed the way technology was perceived to influence foreign affairs (Butfoyo 2006; Fortmann and Von Hlatky 2009; P. M. Morgan 2000; Murray 1997; O'Hanlon 1998). Prior to these critical technological

developments, this genre of scholarship focused on nuclear weapons, under the assumption that conventional weapons posed a relatively minor threat to international stability given the bi-polar nature of the Cold War (Carus 1992).

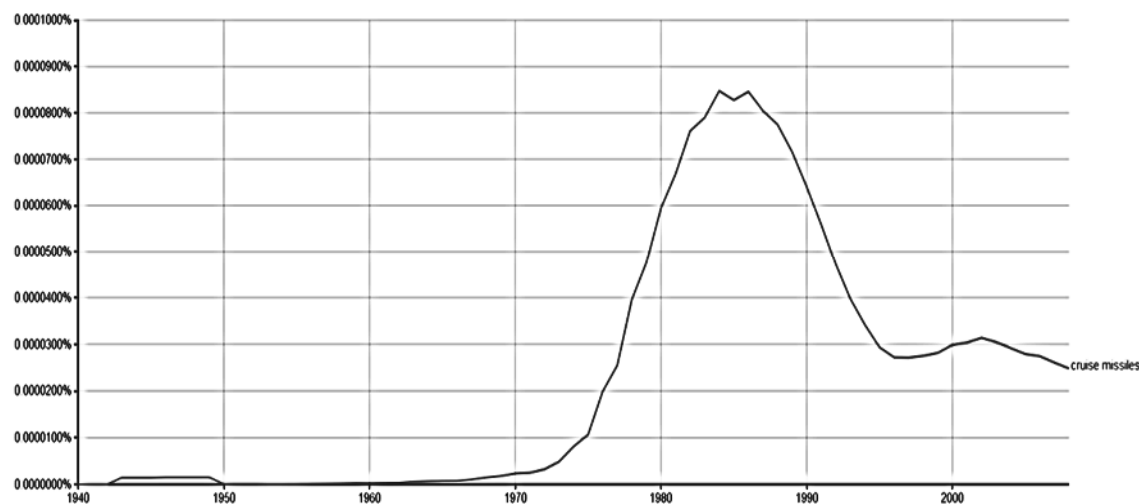
By the early 1970s, advancements in engine miniaturization, microprocessors, and precision autonomous navigation made non-nuclear, long range, cruise missiles possible, driving debate about the use, purpose, and consequences of the weapon (Baker 1981; Betts 1982; Getler 1980; Huisken 1980; Pfaltzgraff and Davis 1977a, 1977b; Sperling 1977; Vershbow 1976). By the 1980s, nuclear cruise missiles largely drove policy discussion and arms negotiation between the Soviet Union and the United States (Mustin 1988).¹⁴ The focus changed from nuclear to conventional roles following the well-publicized display of conventional Tomahawk cruise missiles in the 1991 Persian Gulf War. New missions for cruise missiles were imagined throughout the literature as scholars began to explore cruise missiles from different perspectives while more states pursued novel, high technology, weapons to fill defense gaps and counter great power asymmetric military advantages. I illustrate the spike in cruise missile literature lasting from the mid-1970s to the mid-1990s in Figure 2.1.

As cruise missiles advanced technologically in the 1970s, the need to understand their place in national strategy and politics became evident. Betts (1981, 1982) provided the most significant early contributions to this literature by chronicling the role for cruise missiles in American national security. In his edited volume, and later single work, Betts carved out an influential niche for the operational possibilities presented by the cruise

¹⁴ The 1987 Intermediate-Range Nuclear Forces Treaty (INF Treaty) which banned a whole class of nuclear weapons, including American ground launched cruise missiles, was one product of these negotiations.

missile, albeit with a Cold War nuclear focus, by chronicling a foundation for the way future scholars and policy makers would think about cruise missiles. Betts acknowledged the primacy of the missile's Cold War nuclear mission, but predicted that emerging technologies would improve accuracy and open the door for more useful conventional roles. By the mid-1980s, military thinkers such as Huisken (1980, 1981) Werrell (1985) and Warrell (1989) traced the cruise missile's lineage, writing definitive accounts of the cruise missile's development and production challenges. However, they tended to overlook the possibility of use beyond the nuclear mission, due to limited technology available for long-range precision targeting at the time.

Figure 2. 1 Cruise Missile Publication Volume, 1940-2008



Note: This Google Ngram viewer output depicts the incidence of cruise missile-related publications from 1940 to 2008 as a percentage of Google Incorporated's optical character recognition-scanned text corpora (Michel et al. 2011).

Carus (1990, 1992) built on Betts' (1981) work after a decade of cruise missile development, production, and growing proliferation. Carus (1992) identified growing danger in cruise missile proliferation warning, "It now seems inevitable that Third World countries will begin to acquire land attack cruise missiles during the 1990s." (3) He

noted that as technology matured, it became more accessible to a wider range of states seeking to augment their military capabilities with relatively inexpensive systems. This was also a concern expressed only a few years earlier by the U.S. House of Representatives Armed Services Committee (Committee on Armed Services 1989). These entrepreneurial states were discovering inventive ways to field their cruise missiles, such as using them as coastal defense weapons, and as chemical and biological weapon delivery systems (Kiziah 2003; Mahnken 2005).

Echoing Carus's (1990) concerns, Arnett (1991) warned that cruise missiles posed a threat to the international community beyond unconventional uses. By far the most common cruise missiles are sea-launched anti-ship missiles. Arnett was the first to specifically focus on understanding the role of sea-launched cruise missiles on the modern battlefield, although still in a Cold War, nuclear context. He contended that not only do these weapons pose a formidable threat to capital ships, but their small size and portability make them perfect weapons to conceal aboard ship and to use against coastal targets. Arnett corroborated earlier work by Mustin (1988) and Lempert (1989) on the dangers of surprise sea-based cruise missile attack. Arnett presaged work by Vick, Moore, Pirnie, and Stillion (2001), Vickers and Martinage (2004) and Koh (2016) on the challenges cruise missiles present, even to advanced air forces, such as difficulty in detection, speed, and maneuverability.

The decades surrounding the turn of the millennium ushered a renaissance in cruise missile thought. Scholars tackled tough issues such as satellite navigation and cruise missile proliferation (Lachow 1994, 1995), proliferation in the Third World (J. T. Bowen 1997; Gormley and McMahon 1995; E. R. Jones 1997; Story 1995), new uses for

cruise missiles as a means of coercion (Brigety II 2007; Sparks 1997), and the growing concern over the effects of conventional cruise missiles on global military operations (Gormley 1998; Stillion and Orletsky 1999).

As the specter of superpower confrontation diminished, and the global security focus shifted to terrorism and regional confrontation, so too did the cruise missile literature. Thinkers such as Nicholls (2000), Kan (2000), Gormley (2002, 2003a, 2003b), Heidenrich and Murray III (2004), Mahnken (2005), and Heidenrich (2006) began to question the modern strategic and technical implications of cruise missiles in the 21st Century. They collectively argued that, while the world focuses on weapons of mass destruction and ballistic missiles, regional powers such as China and “rogue” states such as North Korea quietly continued to develop cruise missile capabilities. A prime motivator to advance this technological edge is to counter what they perceive as an American defensive blind spot in cruise missile warfare, while proliferating those capabilities to their allies and friends.¹⁵ Outside the United States, Gruselle (2006) examined both the use of cruise missiles between states, and their use among intra-state factions requiring alternative options to a conventional air force. Lacking the means to purchase, organize, and equip an air force of their own, these factions believe that purchasing and fielding late model cruise missiles helps boost not only their military power, but credibility and prestige as well.

¹⁵ The U.S. failed to demonstrate competence in defending against even the most rudimentary cruise missiles in the 2003 Iraq War. On one occasion, the U.S. even shot down one of its own aircraft by mistake, thinking it was a cruise missile attack (Gormley, Erickson, and Yuan 2014)

As the danger posed by conventional cruise missiles became more apparent, the literature shifted focus from apprehension over evolving threats, to concern over how to control ever-advancing and spreading technology. Kueter and Kleinberg (2007) surveyed advancements in cruise missile technology, warning that the historical barrier to entry – expensive and sophisticated precision navigation – is fleeting. They argued the United States must develop the ability to better track and intercept cruise missiles, a capability lacking in the 1991 Iraq War. Echoing the warnings of sea-launched attacks predicted by Arnett (1991), they urged the United States to create robust consequence management strategies for cruise missile attacks on American soil.

Gormley's (1998, 2002, 2008c, 2008b, 2009, 2013; 2014) voluminous work built on these themes, having written extensively on the security challenges posed by cruise missile proliferation and the political, social, and technical requirements required to obtain and maintain a successful and lethal cruise missile program. He warned of a tipping point in which the threat posed by advanced cruise missiles will exceed that of ballistic missiles, which command more of the world's anti-proliferation efforts. Gormley, Erickson, and Yuan (2014) cautioned that in their efforts to impose dominance over the South China Sea, China raises the potential to destabilize the region by augmenting its formidable ballistic missile capability with advanced cruise missiles. This strategy would not only boost Chinese A2/AD capabilities, but counter increasingly sophisticated American anti-ballistic missile systems. Mishra (2011) agreed with these assessments, arguing cruise missiles are the under-acknowledged weapon of the future. Their evolution and proliferation deserve greater attention.

In addition to the scholarly work relating to cruise missile issues, the United States has called for studies to capture the danger posed by their spread. Aside from the National Air and Space Intelligence Center's regularly published annual missile threat analysis which chronicles current cruise and ballistic missiles, their capabilities, and countries of origin (e.g. Defense Intelligence Ballistic Missile Analysis Committee 2017), the United States Congress holds occasional hearings on cruise missile threats and defense. These hearings echo concerns about cruise missile proliferation, covert programs, and the clandestine delivery of nuclear, chemical, and biological weapons (Committee on Armed Services 1989; Committee on Governmental Affairs 2002; U.S. General Accounting Office 2000). Additionally, the United States commissions special reports on missile threats that examine specific areas of concern such as China's growing cruise missile program (Kan 2000). In military service schools, senior officers occasionally write theses on the general threat posed by cruise missiles, stressing the need for defense systems (Tissue et al. 2003), the danger posed by proliferation among poorer countries (J. T. Bowen 1997), and the implication for allied operations (A. T. Jones 2014). The 2018 United States' National Security Strategy (Mattis 2018b, 2–3) echoes these concerns, warning,

Both revisionist powers and rogue regimes are competing across all dimensions of power. They have increased efforts short of armed conflict by expanding coercion to new fronts, violating principles of sovereignty, exploiting ambiguity, and deliberately blurring the lines between civil and military goals. Challenges to the U.S. military advantage represent another shift in the global security environment. For decades the United States has enjoyed uncontested or dominant superiority in every operating domain. We could generally deploy our forces when we wanted, assemble them where we wanted, and operate how we wanted. Today, every domain is contested—air, land, sea, space, and cyberspace.

The body of literature that examines cruise missiles and their effect on armed conflict focuses on the abstract perception that their proliferation and capabilities present a military threat. The advantages and capabilities offered by cruise missiles to the modern battlefield are significant. They are a tool with which states may decide to use military alternatives in situations that do not reach the level of full scale warfare; for example, they may be deployed in situations in which a state attempts to coerce an adversary into changing its behavior (Kantha 1998b, 1998a; Tanks 2000). As more states seek to offset adversarial military power by supplementing their defense capabilities with cruise missiles, the need to understand the effects cruise missiles have on international conflict will become more pressing. Although the literature has matured from a Cold War perspective to highlighting concerns over proliferation and use among peripheral states and the global south, the literature is missing a systematic empirical analysis to demonstrate that states with cruise missiles indeed pose a statistically significant probability of initiating conflict. This research into the nature of that relationship fills the gap by qualitatively and quantitatively performing an empirical test of the relationship between the possession of cruise missiles and the use of military options to coerce adversaries.

Coercion as a Theoretical Framework

The preceding discussion of MID initiation demonstrated that are multiple known factors correlated with a state's decision to initiate military force. States have a variety of means at their disposal to pursue their policy objectives, but some state characteristics correlate with an increased propensity to threaten, display, or use military force to

achieve these objectives. Cruise missile literature demonstrates that states in possession of these weapons have greater military options available to them. In the pursuit of these options, weaker states have aggressively sought to acquire cruise missiles over the last several decades (J. T. Bowen 1997; Committee on Armed Services 1989; Heidenrich 2006). One reason for this is that initiating military force against a rival state imposes real and potential costs on the challenger, one of which is uncontrolled escalation.

Here, I borrow from the concept of coercive diplomacy to provide a theoretical framework to bridge these two literatures. Coercive diplomacy explains why states may use limited force to achieve their foreign policy objectives. Alexander George (1991) defined coercive diplomacy as, "efforts to persuade an opponent to stop and/or undo an action he is already embarked upon," (5) or a, "defensive strategy that is employed to deal with the efforts of an adversary to change a status quo situation in his own favor." (6) This strategy may require the use of military threats to persuade the adversary that the state is willing and likely to use violence if its demands are not met, even if those threats carry the risk of escalation (Slantchev 2011). Some situations require going beyond threats to what George (1991) called, "exemplary" uses of force. This type of force is typically limited in scope, consisting of only the minimum necessary, at the lowest cost, to persuade the adversary to concede the desired political ends (R. E. Osgood 1957, 1979). Blechman and Kaplan (1978) noted that since World War II, states have increasingly used limited force as an instrument of foreign policy. When faced with a situation where diplomacy is not producing the desired results, limited force as part of a strategy of coercive diplomacy may be used to obtain concessions from an adversary with little or no use of military force. Cruise missiles provide a qualitatively different

capability that enables a state to use small amounts of force, yet still operate in the coercive domain. However, isolating a single weapon's effect on state behavior presents a research challenge (Van Creveld 1991). Causality is opaque.

I do not propose such a bold assertion that cruise missiles alone “cause” a state to initiate conflict, much less full-scale war. Rather, the relationship is one of probability.¹⁶ Making sense of the association in question here requires a theoretical framework to provide structure, independent from firsthand experience, upon which we can conceptualize the phenomenon at work (Abend 2008). Kilbourn (2006) noted, “interpretations are always filtered through one or more lenses or theoretical perspectives that we have for ‘seeing’; reality is not something that we find under a rock.” (545) For this framework, I draw primarily on the coercive theories of George (1991), George, Hall, and Simons (1971), Schelling (1956, 1960, 1967, 2008), and Snyder and Diesing (1977) to construct a theoretical framework as the lens through which to interpret the results of the hypothesis testing in subsequent chapters.

Coercion relies on the threat of force to compel an adversary into complying with one's demands. Schelling (2008) instructed us that, “The power to hurt is bargaining power. To exploit it is diplomacy – vicious diplomacy, but diplomacy.” (2) In response to what he characterized as theoretical shortcoming in deterrence theory, Schelling introduced the concept of compellence between states. He shifted the initiative for action from the deterred adversary to the coercive state in search of target state concessions or a change in behavior (Schelling 1956, 1960). Whereas deterrence seeks to prevent an

¹⁶ For more on the different types of causal arguments in the social sciences see Gerring (2010, 2012; 2005), Adcock (2007), Goertz and Starr (2002), Spohn (1983) Spirtes, Glymour, and Scheines (1991), and Imbens and Rubin (2015).

action before its occurrence, compellence is active and seeks to induce an action on the part of the target state (Freedman 1998; Schelling 1960). George, Hall, and Simmons (1971) framed deterrence as the first stop on a spectrum of coercive crisis management that culminates with persuading an opponent to stop or reverse an action.

Coercion uses a latent threat of violence to exploit an adversary's fears and may consist of punishment for transgressions or denial of future objectives. Snyder (1959, 1961) parsed out the deterrent nature of compellence by drawing distinctions between deterrence by punishment or denial. Punishment acts on an adversary's possible costs for taking an action. Conversely, denial works by influencing the adversary's calculations of the probability they will achieve their objectives should they act. Either way, "deterrence means discouraging the enemy from taking military action by posing for him a prospect of cost and risk outweighing his prospective gain." (Snyder 1961, 3).

George, Hall, and Simmons (1971) added clarity by introducing coercive diplomacy, an instrument of statecraft that integrates, "threats, persuasion, positive inducements, and accommodation" (Levy 2008, 539) to be integrated into an overall bargaining strategy as an alternative to war or other military solutions to problems. Coercive diplomacy's central task is, "to create in the opponent the expectation of costs of sufficient magnitude to erode his motivation to continue what he is doing." (George 1991, 11) A coercive diplomatic strategy combines threats and possibly incremental – though limited – use of force to convey enough resolve to persuade the adversary to comply with demands or negotiate favorable settlements. At the same time, the strategy restricts overall political and material costs to the minimum required to maintain political

acceptance. Coercive devices include ultimatums, tacit ultimatums, try and see approaches, and what George (1991) termed, a gradual turning of the screw.

As Schelling (1966) defined coercion in terms of deterrence and compellence, George (1991) identified two forms of coercion, coercive diplomacy and coercive threats. Coercive diplomacy includes positive inducements and diplomacy, while coercive threats include offensive and defensive uses of violence (e.g. military and/or economic punishment). In this way, the use and intensity of force escalates over time, raising the cost of non-compliance. On its face, this strategy results in a restrained pace, with the rhythm of hostilities being set more by diplomacy than battle. Pape (1996) underscored the limited and cost averse nature of coercion noting, “military coercion attempts to achieve political goals ‘on the cheap.’” (13).

Using coercive diplomacy as a framework helps us understand why states may resort to threats, displays, and uses of force in situations where they are trying to persuade an adversary to change or reverse a course of action. Advanced cruise missiles provide many capabilities, such as precision targeting, penetration, and range. These capabilities enable cruise missiles to be used in situations in which larger weapons or manned missions would otherwise be impractical to initiate limited force or limit escalation, possibly making their use attractive and therefore more likely. For example, in most cases where the United States used cruise missiles since the early 1990s, the use of higher profile weapons, such as ballistic missiles would have likely brought international scorn and possibly escalated a situation, compared to the relative ease and low cost of using cruise missiles to achieve non-critical foreign policy objectives (Tanks 2000). As Byman and Waxman (1999) note, “cruise missile attacks, which promise

extreme accuracy, have increasingly become the option of first resort when coercive force is deemed necessary.” (110)

Theory and Hypotheses

As I have illustrated thus far, a rich literature links a state’s characteristics (e.g. regime type, wealth, territorial contiguity, nuclear weapons) with a state’s propensity to use force. This literature suggests that the use of force is more likely when the risk of escalation and political costs are low and its use is supported by domestic audiences. Cruise missile literature tells us that advanced capabilities, such as speed, stealth, and precision, make these weapons a formidable tool both for great powers and for peripheral states seeking to modernize or supplement their military capabilities. Assuming the alternative military solution to a high stakes dispute is costly and that states prefer peace, cruise missiles provide a low-cost coercive option throughout the spectrum of conflict ranging from threats, to simple one-off strikes, to part of a comprehensive military strategy in larger operations. Finally, coercion theory tells us that the optimal way to use force in situations short of war is through limited strikes that supplement diplomatic efforts, maximize coercive potential and credibility, and yet minimize political and material costs. Echoing Pape (1996), cruise missiles provide a “cheap” yet credible means for a state to pursue its objectives abroad. They do so using a minimum amount of force, commitment, and risk of escalation to alter or reverse an adversary’s undesirable course of action or aggressive foreign policies. In the following section, I use coercive diplomacy as a framework to explain why cruise missile possession increases the likelihood a state will use military force. Where appropriate, I use small examples to

illustrate. The section concludes by offering three hypotheses to test this theory's efficacy.

Preemptive Attacks

Using Byman and Waxman's (2002) typology of coercive mechanisms against which airpower may be used (direct pressure, denial, weakening, and political destabilization) we understand cruise missiles have utility across multiple coercive applications. Cruise missiles provide the possibility of successful, if not always effective, preemptive attack, making cruise missiles the first strike weapon of choice in regions where the threshold for use may be much lower, and the potential to pull greater powers into conflict is much greater (Gormley 2008b). To illustrate, suppose State A, the initiator, observes State B, the defender, preparing to attack State A's ally, State C. State A would be obligated to come to State C's aid should hostilities commence between States B and C. State A has attempted diplomatic solutions to the escalating crisis, but to no avail. So, with the intention of deescalating the crisis and avoid the obligation of entering a politically unpopular full-scale conflict, State A preemptively attacks key limited targets in State B with the intention of forcing State B to back down or concede. State A has now demonstrated to State B that it is willing to act to support its ally, while avoiding the commitments required of a more overt action.

Political Resolve

Cruise missiles provide a means to inflict limited punishment for transgressions in anticipation that the punishment will exceed the adversary's perceived benefits of repeated undesirable behavior (Douhet 1983; Pape 1996; Schelling 1960, 1967). Cruise missiles may be used to signal political resolve while weakening an adversary's ability to

pursue undesirable policies. In this case, State A observes or is the victim of State B's undesirable behavior, which is contrary to State A's foreign policy objectives. State A does not wish to become entangled in a protracted and possibly escalatory conflict with State B, but must punish State B for its actions or risk losing credibility among the international community. So, State A decides to initiate a limited cruise missile attack on State B in response to the transgression, effectively punishing State B to deter future behavior.

Assuming states learn from their past interactions with other states (i.e. Fearon 1995; M. Horowitz 2009), a state using cruise missiles to demonstrate resolve may enjoy the appearance of resolution in the short term, but the effect may be fleeting. Over time, the repeated use of cruise missiles as a means of signaling resolve could have the opposite effect. Instead of signaling that the issue is of high consequence or import for the initiating state, repeated use of cruise missiles as a low-cost alternative to resolving the conflict may signal to the target state that the overall dispute is, in truth, not worth a larger expenditure of blood and treasure. In this case, the target state would have less incentive over time to alter its behavior.

History is replete with examples. For instance, the 1998 cruise missile attack on terrorist targets in Sudan and Afghanistan were launched in response to the Al-Qaeda bombings of American embassies in Kenya and Tanzania. Similar attacks took place on multiple occasions against Iraq for violations of United Nations resolutions in the 1990s and again against Iraq as part of an opening salvo of a larger operation at the onset of the 2003 Iraq war. In 2017 and 2018, the Syrian regime was accused of using chemical weapons against its own people, drawing international condemnation. On both

occasions, the United States used cruise missiles to punish the regime's use of chemical weapons and to weaken the regime's ability to do so again. By using cruise missiles, the United States and its allies were able to send a credible message of commitment to the Chemical Weapons Convention without becoming entangled in the ongoing Syrian Civil War.

Coercive Denial

Cruise missiles may also be used as part of a greater denial strategy to coerce the enemy into believing they have no path to successfully pursue their objective(s). Such a strategy may seek to leverage an adversary's strategic vulnerabilities (Belkin et al. 2002; K. Mueller 1998; Pape 1996). They also provide a means to prevent stronger states from encroaching, or even attacking, an area of interest or a country's borders. Anti-Access/Area Denial (A2/AD) is a defense strategy by which a state invests in relatively short-range weapons, such as cruise and ballistic missiles, capable of denying an adversary's access to key strategic regions or areas. Cruise missiles may be used in a greater A2/AD strategy to threaten competing states in a case where State A wishes to expand its sphere of influence among its neighbors, but State B has conflicting economic interests in the region. To coerce State B's acquiescence, State A threatens State B through the installation and testing of anti-ship cruise missiles in key strategic points in the disputed region. State B must now either alter its preferred strategy to counter State A's actions, resulting in less than optimal courses of action, or take no action at all. In practice, land attack cruise missiles are capable of smashing key enemy targets and eliminating air defenses while anti-ship cruise missiles may be used in a broader A2/AD strategy. China appears to have adopted this type of A2/AD strategy in the contentious

South China Sea; they use cruise missiles developed over the last 30 years to supplement their ballistic missile defenses which are otherwise vulnerable to the sea-based anti-ballistic missile systems commonly deployed by the United States and Japan (Easton 2009; Gormley, Erickson, and Yuan 2014). In Chapter Four, I illustrate how Argentina attempted to use cruise missiles in the 1982 Falklands Conflict to disrupt the United Kingdom's naval strategy to retake the islands following the Argentine incursion.

Destabilization

Cruise missiles may be a vehicle to coerce political destabilization in adversary nations. In this scenario, State A desires regime change in State B, but does not have either the means or political support to change State B's government through invasion (e.g. the 2003 Iraq War) and diplomacy alone is not producing results. State A can instead capitalize on State B's internal unrest by supporting resistance movements in State B using cruise missiles to degrade the State B regime's ability to suppress dissent. This course of action could be justified under the auspices of humanitarian protection or regional interest. Either way, State A's limited use of force can tip the scales in favor of a preferred outcome. The 2011 Libyan Civil War provides an example of cruise missiles' utility as a means of political destabilization. In 2011, as part of a wider regional uprising, Libya found itself in a civil war. To both protect non-combatants and tacitly destabilize the Libyan regime, the United States and its allies launched Operation Odyssey Dawn (Goodman 2012). Although a combined arms effort that included manned aircraft, cruise missiles were used heavily in the early days of bombing to clear the way for allied aircraft incursions while explicitly keeping the overall American

military commitment to a minimum as required by the United States Congress (Boehner 2011; Macmanus and King 2011).

Signaling

When used as a signaling tool, cruise missiles demonstrate capability in the face of an adversary and may help satisfy need for action in the mind of the domestic audience (Fearon 1994b, 1994a). For example, State A wishes to hedge against decline or demonstrate emerging power. So, State A overtly attempts to signal to the world that they are strong and in possession of advanced weapon capabilities by firing volleys of cruise missiles off their coast or near contested waters. Alternatively, State A may join an ongoing dispute in State B, using limited cruise missile strikes as a means of demonstrating their capability. Russia's use of cruise missiles in the Syrian Civil War (2011 -), ostensibly against Islamic State positions with no real defense against more traditional means of bombardment, signals their military's growing technological sophistication vis-à-vis the Kalibr cruise missile. Russia's eagerness to allow foreign journalists to observe these missiles launching from submarines and naval ships, as Russia supports its allies in the Syrian government, further ensures the strategic message is received by would-be challengers and domestic audiences (Associated Press 2017).

Although each of these coercive mechanisms are possible in theory, the mechanism at work in any given situation is contextually dependent. The particular coercive mechanism(s) at work in a given situation could manifest individually, sequentially, or in combination. One would reasonably expect one or some coercive mechanisms to manifest in practice more often than others. For example, Chapter Four demonstrates the cruise missile's high coercive denial utility. The ease with which a state

can emplace cruise missiles for the purposes for an A2/AD strategy is almost without equal. Once the weapon system is established or in place, a cruise missile's persistence, ease of maintenance, and profile make it a good choice in this role. As I have noted, China has implemented this strategy to some effect in the South China Sea.

The other most likely coercive mechanism involving cruise missiles is as a means of signaling resolve. Cruise missiles have proven their utility for punishing adversaries for undesirable behavior while at the same time signaling to the international community and domestic audiences a degree of national resolve. Chapter Five illustrates how cruise missiles can be used to signal resolve, showing how likely this mechanism is to manifest in a diverse set of situations. For the United States, resolve generally manifests in the form of punishment for transgressions as was the case against Iraq and Al-Qaeda in the 1990s and more recently in Syria.

Hypotheses

Cruise missiles may become attractive tools in a state's quest to demonstrate resolve to the adversary in the face of sunken costs. Mobilizing forces, or moving troops and equipment into territory to signal resolve to adversary and hedge against loss, carries costs. A state may tie its own hands through the gradual increase of sunken costs over the course of mobilizing forces to meet the enemy. Thus restrained, backing down becomes less of an option in the face of mounting costs. Troops and equipment are not easily removed, though once in place the cost of their encampment becomes increasingly difficult to justify. The state must use them or lose them, and to lose them is to also lose face in front of the enemy. Increases in sunk costs strengthens the credibility of threats made, and fuels the likelihood of a war that neither side wants (Slantchev 2005).

Using cruise missiles to threaten, display, or use force may mitigate or defer some sunken costs while indicating resolve by avoiding costly mobilization on a greater scale. Instead of mobilizing troops, for instance, a state can position a cruise missile-armed naval ship off the coast, a tacit threat whose action may deviate little from the ship's usual mission. Gunboat diplomacy, in fact, has a long history because it is an efficient way for states to punctuate foreign policy. A ship is relatively easy to install and keep in place and relatively easy to remove should the threat pass, unlike deploying large amounts of troops that need a base of operations, complicated logistical lines, and local contracts (Cable 1981). Although placing a ship off the adversary's coast sends a signal of its own, it does not necessarily tie the state's hands in ways that landing troops most certainly would. Once in place, launching cruise missiles from that ship sends a powerful message – helping maintain the state's reputation through a more credible indication of resolve – and a signal that threats will be backed up with action.

A state is likely to initiate a MID when it is confident it can pursue policy goals through the successful use of military power in a way that limits casualties, commitment, and conflict duration (Allen 2007; Byman, Waxman, and Larson 1999; Van Evera 1998). We can infer the effects of certain advanced weapon systems on the decision to use coercive military strategies. As explained, modern cruise missiles bring not only a powerful first strike capability, but their precision enables the user to maximize coercive effects ranging from a threat of force to a large-scale bombing campaign (Michael Horowitz and Reiter 2001). Combining these capabilities with speed, stealth, and autonomous guidance, a cruise missile provides the initiating state with the confidence it needs to successfully increase pressure through limited attack (Van Evera 1998), swaying

the state in favor of using military solutions, particularly in cases where the receiver state lacks the ability to retaliate or defend itself. In this case, deciding to threaten, display, or use force may maximize expected policy gains by simultaneously lowering the political and material cost of acting. Conversely, states lacking this capability will be less likely to use military power as a means of responding to crisis given similar circumstances and political pressures to take action (Huth and Russett 1984). Accordingly, in terms of the correlation between the requirements for using force in coercive situations and the capabilities provided by cruise missiles, I expect the data analysis to support the following primary hypotheses:

Hypothesis 1: States armed with cruise missiles are more likely than states without cruise missiles to initiate military force.

Hypothesis 2: States armed with cruise missiles are more likely to initiate crises through threats and displays of force than states that do not have cruise missiles.

The unmanned nature of cruise missiles means their use reduces the risk to otherwise physically and politically vulnerable manned weapon systems. Popular support for military conflict in democratic states is typically underscored by a low tolerance for casualties in the early stages of conflict and a particular sensitivity to military casualties (Gartner 2008a; Gartner and Segura 1998; Gartner, Segura, and Wilkening 1997; Larson 1996; J. E. Mueller 1973, 1993). In contrast, although authoritarian regimes may not be held to the same electoral accountability, research is divided over whether or not they tend to use military force more than democracies, when considering domestic pressures from the selectorate and proximity to rivals (Bueno de Mesquita et al. 2003; Debs and Goemans 2010; Kim 2017; Sechser 2004; J. L. P. Weeks

2012). Regardless, although audience costs may send a strong signal of the strength of a democracy's threat, some models indicate that military threats carry just as much weight, regardless of regime type (Slantchev 2005). When cruise missiles are concerned, democracies may not be the only regime that can benefit from missile strikes as a means of coercion.

The cruise missile's ability to minimize collateral damage through precision strike, and decreased risk to military personnel, increases its attractiveness in coercive situations in which an expedient resolution is called for or to satisfy critical domestic audiences and support coalitions. As fewer military and civilian lives are at risk, the unmanned nature of cruise missiles may make using force more politically acceptable domestically compared to more overtly dangerous methods such as manned bomber missions or troop incursions (Allen and Martinez-Machain 2018a; Brigety II 2007; Burk 1999; Macdonald and Schneider 2017; J. D. Singer 2009). Considering the emerging research on the catalysts and limitations of democratic and authoritarian use of armed force, and considering the capabilities cruise missiles provide, we should expect to observe:

Hypothesis 3: There is no difference between the probabilities that democratic or autocratic states with cruise missiles will use military power to achieve foreign policy objectives.

I submit that a cruise missile provides the state with a coercive tool that either directly, through use, or indirectly, by contributing to a greater strategic goal, increases the likelihood the state will resort to an exemplary use of force when executing a coercive strategy against an adversary. Coercive theory provides a framework to understand this

logic. Cruise missiles may not only provide a way to demonstrate resolve without greater political commitment, but they can embolden a state to embark on more aggressive foreign policies with the knowledge that they possess a weapon that increases the chances they may deny an adversary's response through a greater A2/AD strategy. Cruise missiles provide a low-cost means to punish an adversarial state or non-state actor's transgressions. In this way, cruise missiles offer a means to compel a change in adversarial behavior with little risk and few resources required. Finally, the cruise missile provides a means to threaten or display force to either deter another state's behavior or compel them to comply with an otherwise undesirable foreign policy.

Unlike higher-profile weapons, such as ballistic missiles or nuclear weapons, cruise missiles carry less political or psychological gravitas. For example, when North Korea tests its ballistic missiles, it receives international condemnation. However, when North Korea tests cruise missiles, the reaction is often local, even if the test's intended effect is to coerce a change in South Korean behavior (Michishita 2009; Panda 2017). These reasons make the modern, technologically sophisticated, cruise missile an attractive option for initiating or supporting a militarized interstate dispute or international crisis.

Conclusion

This chapter presented a review of the literature that informs this research endeavor. I began by laying out many of the factors known to be associated with a state's propensity to initiate threats, displays, or force against other states. Then, I examined the small, but important and informative, cruise missile literature. Since the 1980s, scholars

have identified the dangers these weapons pose to international security. However, these literatures do not intersect. To provide a framework upon which to build such a synthesis, I presented coercion theory to understand how a single, qualitatively special, type of weapon may increase the likelihood of conflict. I concluded by proposing a theory to explain how cruise missiles have this effect and presented three testable hypotheses with which to explore the theory.

In sum, several correlates are associated with a state's likelihood of using military force against its competitors. These correlates include regime type, state wealth, major power status, alliances, territorial contiguity, revisionism, and nuclear weapons. Although this literature is rich with descriptions of the various state characteristics that may increase the chances of a state initiating military force, a relatively small amount of the literature accounts for influence of conventional weapon systems on state behavior.

Cruise missiles provide a qualitatively different capability to states. They reduce the costs normally associated with initiating an attack on another state in terms of commitment, manpower, and casualties on each side. In addition, they offer a state an effective A2/AD capability that may embolden more aggressive defensive or offensive postures. At lower levels of conflict, coercion theory appears to justify a weapon's ability to provide the motive required to use force.

Existing cruise missile literature focuses on their capability and military danger. It does not systematically test the threat to international stability. This dissertation constitutes the first systematic attempt to understand the cruise missile's effect on state behavior. Here, I bridge the MID initiation literature and cruise missile literature by applying the way we think about the use of force in coercive situations. Sorting out the

effects of cruise missiles on state behavior still presents a research challenge. In the next chapter, I offer a research design to study the weapon's effect on conflict initiation using an explanatory sequential mixed method approach. After presenting a research design, I test the hypotheses through rigorous data analysis, the results of which I illustrate using case studies in later chapters. Finally, I interpret these results in Chapter Six where I demonstrate that indeed, by becoming the go-to weapon of exceptional uses of force, the cruise missile does affect state behavior.

CHAPTER THREE: RESEARCH DESIGN AND DATA ANALYSIS

In this chapter I present the research design and quantitative data analysis to test hypotheses related to the cruise missile's effect on state behavior. I employ an explanatory sequential mixed method research design, leveraging original data on state cruise missile acquisition and explanatory case studies to illustrate the connection between cruise missile possession and the likelihood a state will use military options to coerce adversaries. The advantage of the mixed method approach is that it allows the researcher to leverage the strengths of both quantitative and qualitative research to fully explore answers to pressing research questions (Johnson and Onwuegbuzie 2004; Johnson, Onwuegbuzie, and Turner 2007; Pelto 2015; Plano Clark and Ivankova 2015). To begin, I describe the research design in detail. I then present the quantitative findings of the statistical analyses used to test my hypotheses. Finally, I interpret these quantitative results concluding that empirical evidence indeed supports the hypothesis that there is an increased probability a state armed with cruise missiles will initiate military force. In the Chapters Four and Five, I present the second phase of research in the form of qualitative explanatory case studies.

Research into the effect of cruise missiles on state behavior is particularly suited to a mixed method design, given the diverse correlates of conflict initiation and the use of military force in international disputes. The advantage is twofold. Quantitative empirical data tests for evidence of a propensity to initiate challenges or militarized interstate disputes. Qualitative case studies then illustrate the story behind how and why cruise missiles played a role in the decision to use military force for coercive diplomacy. The

mixed method design brings this research closer to uncovering the ever-elusive connective tissue that appears to bind these weapons to state behavior.

I propose that states armed with cruise missiles are more likely to use military options to achieve their foreign policy objectives than are states lacking this capability. This thesis suggests that states armed with cruise missiles have an increased likelihood of initiating a challenge or a militarized interstate dispute against adversaries. My research builds on work by Mettler and Reiter (2013) and Barkley (2008) on ballistic missiles by examining a weapon that is becoming more conspicuous on the world stage through its increasingly frequent use as a means to coerce adversaries into changing their behavior. Using quantitative analysis in this first phase of the mixed methods research design, I uncover evidence that cruise missiles significantly increase the probability a state will initiate a militarized interstate dispute. This finding supports the first hypothesis – advanced in Chapter Two – that states armed with cruise missiles are more likely to exercise military force to coerce their adversaries than states that do not have cruise missiles. The empirical tests also support Hypothesis 2. I find a significant positive relationship between cruise missile possession and the likelihood of engaging in conflict at violence and hostility levels below that of full-scale warfare, specifically threats and displays of force. Finally, as postulated by Hypothesis 3, I observe no significant difference between the behavior of autocratic or democratic states when either regime type possesses cruise missiles.

Research Design

Attributing the effect of any one military weapon system on state behavior presents a research challenge. On its face, one may simply perform a statistical data analysis to test the relationship between those states in possession of cruise missiles and the initiation of force. This method is relatively straightforward but lacks a degree of fidelity to explain the nature of the relationship. For the latter, a more comprehensive approach is needed. To confront the problem, this project uses an explanatory sequential mixed method design spanning three phases of research that leverage quantitative statistics and qualitative case studies (Igo, Kiewra, and Bruning 2008; Ivankova, Creswell, and Stick 2006). Plano Clark and Ivankova (2015) defined mixed methods research as, “a process of research in which researchers integrate quantitative and qualitative methods of data collection and analysis to best understand a research purpose” (4). A mixed method design involves procedures for collecting, analyzing, and integrating both quantitative and qualitative strands of research under the rationale that neither strand alone is sufficient for capturing the essence and details of a particular research situation (Creswell 2002; Ivankova, Creswell, and Stick 2006; Tashakkori and Teddlie 2010). The advantage of using a mixed method design is that it helps the researcher locate stronger evidence for conclusions by leveraging the strengths and weaknesses of each strand of research (Johnson and Onwuegbuzie 2004).

This ex post facto research relies on past events as empirical evidence with the understanding the relationships between the variables exist in situ by focusing on existing conflict data sets and historical case studies (Kerlinger 1973). Using an explanatory sequential mixed method design, relationships between variables may first be tested by a

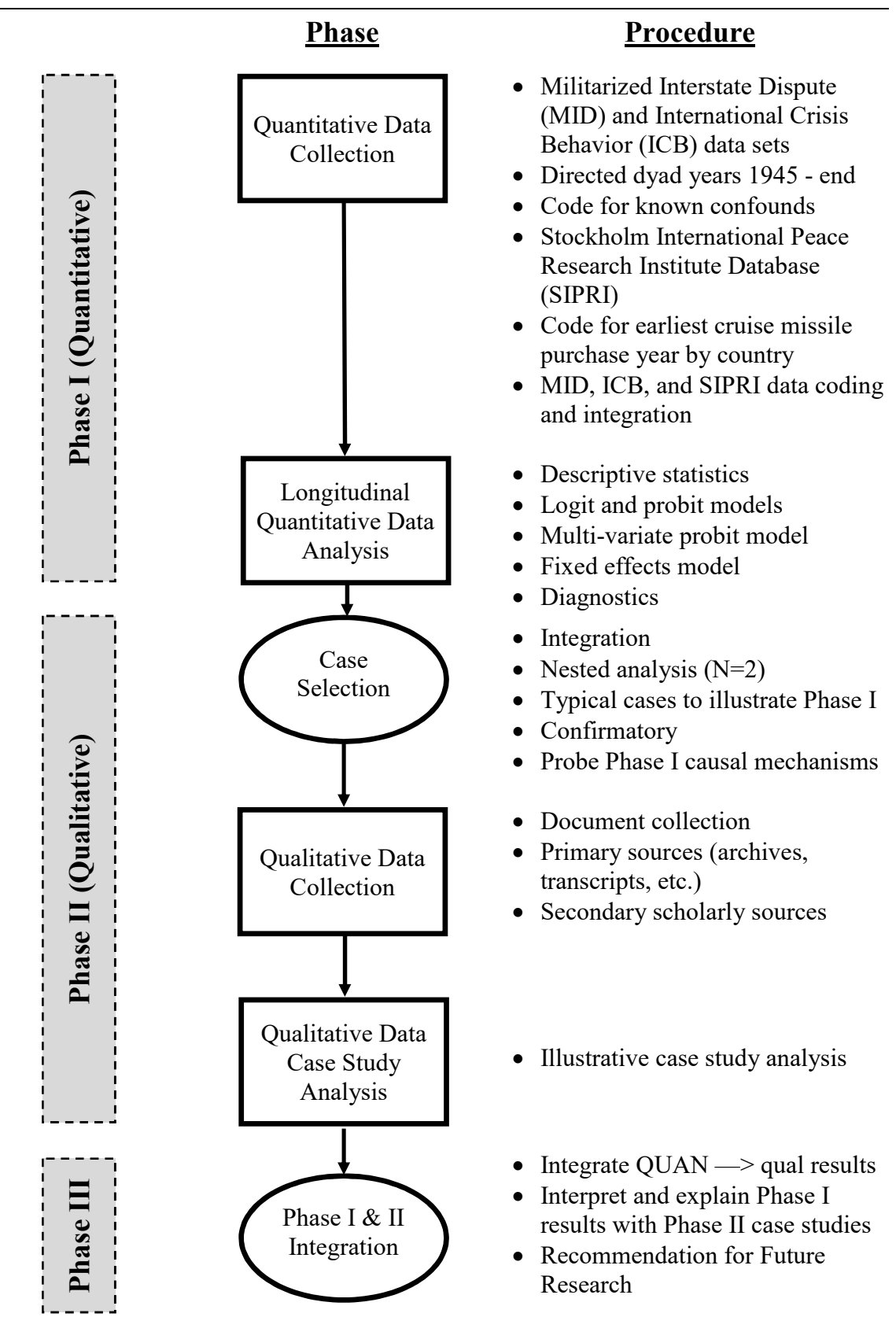
statistical large-N analysis of panel data. Then, the large-N investigation is followed by small-N case studies of typical examples selected from within the quantitative data set that represent successful model predictions of the dependent variable. This method of case selection connects the two strands of research and allows the qualitative strand to build upon the quantitative strand's conclusions (Creswell et al. 2003; Fetters, Curry, and Creswell 2013; Lieberman 2005). Finally, I integrate the quantitative and qualitative strands through joint interpretation, using the strengths and weaknesses of each method to establish more robust conclusions.

A method that integrates different approaches is particularly well-suited for this project. While quantitative empirics may provide evidence for the effect of cruise missiles on state behavior, this type of data is not explanatory. To adequately explore why an event occurs, a qualitative strand of case study research is needed to uncover the causal mechanisms behind the results (Creswell and Plano Clark 2011; Falleti and Lynch 2009). The qualitative strand of research augments the quantitative strand's weakness in explaining how the phenomena operate. The quantitative strand provides the generalizability otherwise lacking in contextually-dependent qualitative case studies (Plano Clark and Ivankova 2015). Each strand of research expands on the other to increase the inquiry's scope so that each component – qualitative and quantitative – is used for a specific task (Greene, Caracelli, and Graham 1989). I operationalize this concept by dividing this project's research effort into a quantitative phase, a qualitative phase, and an integrative phase.

The use of the explanatory sequential mixed method design is well established in the mixed method literature (e.g. Creswell 2014; Creswell et al. 2003; Ivankova,

Creswell, and Stick 2006; Tashakkori and Teddlie 2010). Political scientists routinely employ the explanatory sequential mixed method design with great success and impact (e.g. Blattman 2009; Evertsson 2017; Feaver and Gelpi 2011; Ide 2016; Lieber 2005; Putnam, Leonardi, and Nanetti 1994; Steele 2011; Wilkinson 2004). This type of design consists of two straightforward phases of data collection and analysis followed by a third phase of integration and synthesis of the findings. In the first phase, the researcher collects and analyzes quantitative data. This phase is often used to test a theory or concept, but because quantitative tests focus more on correlation than causal illustration, they generally lack the ability to explain or explore the results in depth (Braumoeller and Sartori 2004; Creswell 2008). The second phase of an explanatory sequential design builds on the first phase by collecting and analyzing qualitative data to help explain and elaborate on the results from the first phase (Ivankova, Creswell, and Stick 2006). Finally, the third phase of the design consists of a concluding integration, synthesis, and interpretation of the conclusions from the quantitative and qualitative phases. For this research, I use all three phases of the explanatory sequential design as illustrated in Figure 3.1.

Figure 3. 1 Explanatory Sequential Mixed Method Research Design for Studying the Effect of Cruise Missiles on State Behavior



Phase I

The purpose of the quantitative analysis phase is to test the research hypotheses and to identify exemplar cases for qualitative examination in Phase II. As the main thrust of this research, I evaluate the quantitative empirical support for the effect of cruise missiles on state behavior using probit and logit models, employing two different datasets to evaluate conflict behavior, using the directed dyad-year at the state level as the unit of analysis. A directed dyad is one in which a pair of states, A and B in a particular year, generate two cases for each year: one dyad covers action from A directed toward B; while the other case includes actions from B directed toward A. In each case, for purposes of analysis here, the first state is the potential challenger or initiator state (referred to as “State A” in result discussions) and the second state is the defender (referred to as “State B” in result discussions). The use of a directed dyad-year makes it possible to take advantage of multiple levels of analysis using control variables not possible in higher-level aggregation of data (i.e. the system year). The directed dyad also helps to isolate the conflict initiator and has the advantage of a larger number of control variables than can be included in monadic studies (D. S. Bennett and Stam 2000b).¹⁷

¹⁷ For example, Reiter and Stam (2003) used the directed dyad to clarify Peceny, Beer, and Sanchez-Terry’s (2002) work on democracy and non-democracy militarized interstate dispute (MID) initiation. Though Peceny et al. found a relationship between divergent regime types and MID initiation, they did not support their argument that democracies were more likely to challenge with empirical evidence. Reiter and Stam clarified the relationship, using the directed dyad, to find personalist dictatorships are more likely to challenge democracies. Reiter and Stam’s results were empirical, whereas Peceny et al. argued democracies have the greater propensity to initiate MIDs based on prior theoretical justification.

I test the first and third hypotheses using dyadic International Crisis Behavior (ICB) data (Brecher et al. 2017) provided by Mettler and Reiter (2013). I then compare those results with results from a parallel analysis using data from the Militarized Interstate Dispute (MID) data set, version 4 (Palmer et al. 2015). Data set observations ranging between the years of 1946 and 2007 establish both initiation rate and likelihood of cruise missile-equipped states initiating conflict as opposed to non-equipped states.¹⁸ The advantage of taking a large-N approach that examines all states in the international system across a large period of relevant time is that it systematically isolates the effect of acquiring cruise missiles on the intensity and frequency of conflict initiation (D. S. Bennett and Stam 2000b). This method does so by observing state behavior both before cruise missile acquisition and after cruise missile acquisition as compared to those states without cruise missile, but with similar covariates. Including all dyadic relationships between 1946 and 2007 minimizes selection bias when estimating the effect of cruise missile possession on state behavior.

Phase II

In the second phase, I build on the statistical analysis with explanatory case studies derived from the statistical sample to examine the circumstances behind the use of military coercion (Lieberman 2005; Morse 1991). George and Bennett (2005) defined the case study approach as, “the detailed examination of an aspect of a historical episode

¹⁸ Statistical software limits analysis to include only those observations for which each variable has a complete set of observations. Thus, if an analysis contains 5 variables with complete observations ranging from the years 1946 to 2015, but one variable which terminates its observations in 2007, the entire analysis will drop those observations from 2008 to 2015. Due to limitations in the availability of some variables used in this analysis, observations do not go beyond the year 2007.

to develop or test historical explanations that may be generalizable to other events.” (5)

In the study of international relations, prominent areas of study involve the interaction of complex strategies and multifaceted variables. This is particularly true in conflict studies as a large number of actors interact across multiple levels of analysis through a dizzying array of private information, bluff, and deception (A. Bennett and Elman 2007; Fearon 1995). As such, international relations scholars often use the case study method as a means of complementing their quantitative and formal research (Bates 1998).

I purposefully select the case studies from the set of observations in the MID data set using case selection strategies identified by Seawright and Gerring (2008) and Ivankova, Creswell, and Stick (2006). These cases exemplify the relationships identified in the quantitative strand. Because the cases are illustrative, and due to the explanatory nature of Phase II, I deliberately choose typical cases rather than deviant cases to expand upon the quantitative results from Phase I.

The first case, presented in Chapter Four, focuses on the important role cruise missiles played in Falklands Conflict of 1982 between Argentina and the United Kingdom. This conflict explains two dimensions of cruise missile use in conflict. First, Argentina unsuccessfully attempted to maximize the expected utility of capturing the Falkland Islands by deterring a British military response using newly-acquired air-launched anti-ship cruise missile technology to deny the British Navy access to the area. However, when deterrence failed, and the United Kingdom assembled a task force to reclaim the islands, Argentina successfully used their limited cruise missile capability to deny the British Navy unrestricted freedom of maneuver, effectively altering British strategy in the conflict. Additionally, the Falkland case presents a situation in which

cruise missiles were not physically used to initiate the use of force nor used in the early stages of the conflict. Instead, their utility came later when expended to deny the British Navy unrestricted access to the South Atlantic to conduct operations against Argentina. In all, cruise missiles accounted for the sinking of two of six British ships sunk and the severe damage of a third.

The second case examines American cruise missile diplomacy in the 1990s in which the United States used cruise missiles extensively as a means of selective punishment against norm transgressions. Missile diplomacy refers to the repeated use of cruise missiles during the 1990s (and often beyond) in situations that ordinarily may not call for military responses such as in retaliation for an assassination attempt by the Iraqi government and as punishment for the bombing of American embassies by terrorist organizations. The use of cruise missiles in the 1990s showed that cruise missiles not only provide a means of using force for coercion with little risk to military personnel, but also provide a way of sending a strong signal to adversaries that is politically palatable and seemingly decisive (Brigety II 2007; Sparks 1997). This new thinking in how to employ cruise missiles, a deviation from Cold War nuclear strategy, stands in contrast to roles cruise missiles played in the Falklands Conflict. No longer were cruise missiles simply another weapon, in a cast of weapons, to be leveraged as part of a greater military strategy. Instead, in only a decade, cruise missiles themselves became the go-to weapon for coercive diplomacy.

The cases selected represent instances in which statistical models used in the first phase produced a relatively high predicted probability of conflict initiation. The cases also represent two distinct periods of cruise missile capability and employment; the first

case – The Falklands Conflict – occurs before the open employment of precision land attack cruise missiles, while the second case – U.S. Cruise Missile Diplomacy – takes place a decade later as states began to understand the technological advantages of precision navigation and stealth flourishing in the third phase of cruise missile development. Selecting these typical cases in this research offers a better exploration of the mechanisms at work in the quantitative analysis, while parsimoniously representing the theoretical mechanisms at work in accounting for the cruise missile's role in the use of force (George and Bennett 2005).

Phase III

In the third phase of this mixed methods design, I conclude my investigation by integrating the quantitative and qualitative phases using the weaving approach prescribed by Stange, Crabtree, and Miller (2006), Creswell and Tashakkori (2007), and Fetters, Curry and Creswell (2013) . Following the completion of the quantitative and qualitative phases of research, I synthesize the results of each strand together to evaluate the implications for the given hypotheses using associative inferences (Creswell and Plano Clark 2011). I critically review the results as they applied to coercive theory, seeking and elucidating relevant policy implications while weaving each strand together based on hypothesis. Ultimately, I observe that states with cruise missiles are more likely to – and do indeed – exercise the use of force at higher rates than do states without cruise missiles. Not only are cruise missile states more prone to use military force, regardless of regime type, but they initiate threats and displays of force at greater rates as well.

Quantitative Data Collection and Operationalization

In this mixed methods research project, I analyze the independent variable, cruise missile possession, with control variables known to be correlated with the use of force to understand the weapon's influence on the dependent variable, the initiation of military force. I use the directed dyad as the unit of measurement to retain the decision to use the military as a means of coercion grounded in the actions of individual states by way of the decisions of each state to initiate conflict upon another (D. S. Bennett and Stam 2000b; Sprinz and Wolinsky-Nahmias 2004). A directional dyad also clearly defines who is attacking whom, information that non-directed dyad and monadic designs fail to provide.

I derive the non-original quantitative data from multiple sources common to political science research. Overall project data, including dependent, independent, and control variables, are based on original data collection plus data from the International Crisis Behavior (ICB) data set (Brecher et al. 2017) as operationalized by Mettler and Reiter (2013) and the Correlates of War Project's (CoW) Militarized Interstate Dispute data set (MID), version 4 including National Material Capabilities data (Palmer et al. 2015). To integrate this data, I use the Expected Utility Generation and Data Management Program version 3.21 (D. S. Bennett and Stam 2000a) to create a data shell over which I integrated ICB, MID, and regime type data from Cheibub, Gandhi, and Vreeland's (2010) Democracy and Dictatorship data set and data derived from the Polity 4 Project (Marshall, Gurr, and Jaggers 2016).

Independent Variables

The primary independent variable for this research is state cruise missile possession based on the year of initial acquisition. The date of initial cruise missile

acquisition is determined through original research by first querying the Stockholm International Peace Research Institute (SIPRI) Arms Transfers Database (SIPRI 2015) for cruise missile sales. I sort arms transfers by type (i.e. missiles), determine the year of initial purchase by state, and report data from 1954, the first year a modern cruise missile is put into operational service, through 2015, the last year of available data.¹⁹ The data from this query is then cross-referenced with information provided by the Center for Strategic and International Studies' Missile Defense Project (2019), the National Defense Intelligence Agency (2017), Kueter and Kleinberg (2007), and Werrell (1985) to validate the dates and types of cruise missile possession and account for acquisition through indigenous programs not captured in the SIPRI data, such as those in the United States, China, and the Soviet Union/Russia. Such indigenous programs are not clearly reflected in the SIPRI database unless the country of origin sells the missile, and then only the sale is captured, which may occur well after design and fielding. Table 3.1 summarizes these results.

¹⁹ Although Germany fielded a cruise missile, the V-1 "Vengeance weapon" or "Buzz Bomb," in World War II, for this research I consider this an outlier due to its late use in an already complicated conflict. It was really not until 1954 that the first fully operational and persistently fielded cruise missile was brought into service.

Table 3. 1 Initial Cruise Missile Acquisition by Year

Country	Year	Designation	Type	Source
United States of America	1954	MGM-1 Matador	LACM	Indigenous
Sweden	1955	RB-315	ASCM	Indigenous
USSR (Russia)	1956	SS-N-3A	ASCM	Indigenous
China	1960	P-15/SS-N-2A Styx	ASCM	USSR
Indonesia	1961	KS-1/AS-1	ASCM	USSR
Egypt	1961	KS-1/AS-1	ASCM	USSR
Cuba	1962	P-15/SS-N-2A Styx	ASCM	USSR
Poland	1963	KS-1/AS-1	ASCM	USSR
Bulgaria	1963	KS-1/AS-1	ASCM	USSR
Syria	1963	P-15/SS-N-2A Styx	ASCM	USSR
German Democratic Rep.	1964	P-15/SS-N-2A Styx	ASCM	USSR
Romania	1964	P-15/SS-N-2A Styx	ASCM	USSR
Yugoslavia	1965	P-15M/SS-N-2A	ASCM	USSR
Algeria	1967	P-15U/SS-N-2A Styx	ASCM	USSR
North Korea	1968	P-15/SS-N-2A Styx	ASCM	USSR
Finland	1969	P-15/SS-N2A Styx	ASCM	USSR
Norway	1970	Penguin 1	ASCM	Indigenous
Italy	1971	Sea Killer Mk2	ASCM	Indigenous
Iran	1971	Sea Killer Mk2	ASCM	Italy
India	1971	P-15/SS-N-2A Styx	ASCM	USSR
France	1972	MM-38 Exocet	ASCM	Indigenous
German Federal Republic	1972	MM-38 Exocet	ASCM	France
Greece	1972	MM-38 Exocet	ASCM	France
Israel	1972	Gabriel I	ASCM	Indigenous
Iraq	1972	P-15U/SS-N-2B Styx	ASCM	USSR
South Korea	1972	MM-38 Exocet	ASCM	France
Singapore	1972	Gabriel 1	ASCM	Israel
Vietnam	1972	P-15U/SS-N-2A Styx	ASCM	USSR
United Kingdom	1973	MM-38 Exocet	ASCM	France
Chile	1974	MM-38 Exocet	ASCM	France
Somalia	1975	P-15U/SS-N-2B Styx	ASCM	USSR
Turkey	1975	Penguin 1	ASCM	Norway
Pakistan	1975	MM-38 Exocet	ASCM	France
Peru	1976	MM-38 Exocet	ASCM	France
Argentina	1976	MM-38 Exocet	ASCM	France
Denmark	1976	RGM-84 Harpoon	ASCM	USA
Libya	1976	P-15U/SS-N-2B Styx	ASCM	USSR
Thailand	1976	Gabriel 1	ASCM	Israel

South Africa	1977	Gabriel II	ASCM	Israel
Belgium	1978	MM-38 Exocet	ASCM	France
Brazil	1978	MM-38 Exocet	ASCM	France
Netherlands	1978	RGM-84 Harpoon	ASCM	USA
Ethiopia	1978	P-15/SS-N-2B Styx	ASCM	USSR
Oman	1978	MM-38 Exocet	ASCM	France
Brunei	1978	MM-38 Exocet	ASCM	France
Spain	1979	RGM-84 Harpoon	ASCM	USA
Yemen People's Republic	1979	P-15U/SS-N-2B Styx	ASCM	USSR
Malaysia	1979	MM-38 Exocet	ASCM	France
Venezuela	1980	Otomat-2	ASCM	Italy
Ecuador	1980	Gabriel II	ASCM	Israel
Nigeria	1980	MM-38 Exocet	ASCM	France
Saudi Arabia	1980	RGM-84 Harpoon	ASCM	USA
United Arab Emirates	1980	MM-40 Exocet	ASCM	France
Taiwan	1980	Hsiung-Feng 1	ASCM	Indigenous
Japan	1980	RGM-84 Harpoon	ASCM	USA
Morocco	1981	MM-38 Exocet	ASCM	France
Australia	1981	RGM-84 Harpoon	ASCM	USA
Kenya	1982	Gabriel II	ASCM	Israel
Angola	1982	P-15U/SS-N-2B Styx	ASCM	USSR
Yemen Arab Republic	1982	P-15U/SS-N-2B Styx	ASCM	USSR
Kuwait	1982	MM-40 Exocet	ASCM	France
Qatar	1982	MM-40 Exocet	ASCM	France
Colombia	1983	MM-40 Exocet	ASCM	France
Bangladesh	1983	Hy-2 Silkworm	ASCM	China
Cameroon	1984	MM-40 Exocet	ASCM	France
Bahrain	1984	MM-40 Exocet	ASCM	France
Tunisia	1985	MM-40 Exocet	ASCM	France
Canada	1989	RGM-84 Harpoon	ASCM	USA
Yemen	1990	P-15/SS-N-2B Styx	ASCM	USSR
Portugal	1991	RGM-84 Harpoon	ASCM	USA
Cyprus	1994	MM-40 Exocet	ASCM	France
Albania	1995	Hy-2 Silkworm	ASCM	China
Myanmar	1995	C-801/CSS-N-4	ASCM	China
Georgia	1999	P-15M/SS-N-2C	ASCM	Ukraine
Sri Lanka	2000	Gabriel II	ASCM	Israel
Mexico	2004	Gabriel II	ASCM	Israel
Turkmenistan	2011	Kh-35/SS-N-25	ASCM	Russia
New Zealand	2014	Penguin 2	ASCM	Australia

Note: LACM - Land Attack Cruise Missile; ASCM - Anti-Ship Cruise Missile

Not all cruise missiles are created equal. The diverse types, ranges, and payloads found in the panoply of cruise missiles in use since their conception make coding for possession a research challenge. Some cruise missiles launch from either ship, submarines, or aircraft to targets deep in enemy territory while navigating around enemy air defense systems and terrain. Others, such as the Russian Styx or French Exocet, are primarily designed to attack ships at sea, although they are often modified ad-hoc for land-based targets. Each variant has different ranges, capabilities, accuracy, and methods of navigation specific to their function. However, unlike fixed systems such as ballistic missiles, cruise missiles are easily transported within range of their target on land or sea. Some are perhaps even moved via deceptively innocuous platforms such as shipping containers or civilian aircraft, rather than depend on a fixed or semi-fixed locations within friendly borders (Heidenrich 2006).²⁰ In October 2016, Iranian-backed Houthi forces attacked American warships off the coast of Yemen using modified cruise missiles fired from the back of makeshift mobile land platforms (LaGrone 2016). This flexibility means the weapon defies assumptions about proximity and use. As such, when coding for cruise missile possession, I treat cruise missile type, range, payload, and speed as homogenous.

I identify the primary independent variable, cruise missile possession, in two ways. First, I define cruise missiles according to the oft-used Toomay (1981) definition: “an unmanned, expendable, armed, aerodynamic air-breathing, autonomous vehicle.”

²⁰ Some ballistic missiles, such as the Russian RT-2PM Topol (NATO designation SS-25 Sickle), have some limited mobility. They are capable of being transported to their launch sites via a transporter, erector, launcher heavy vehicle. However, they are still limited in their range of mobility and launch location.

(31) This definition includes, but is not limited to, Anti-Ship Cruise Missiles (ASCM) and their variants such the Soviet SS-N-2 *Styx*, the Chinese HY-2 *Silkworm*, the U.S. RGM-84 *Harpoon*, and the French MM-38 *Exocet* as well as Land Attack Cruise Missiles (LACM) and their variants such as the Indian *BrahMos*, the U.S. BGM-109 *Tomahawk*, and the United Kingdom's *Storm Shadow*. Second, I assign countries in possession of cruise missiles a score of 1 for each year the missiles are in the state's possession, regardless of operational status, and 0 otherwise using the dichotomous variable $cruisea_{(t-1)}$ for State A and $cruiseb_{(t-1)}$ for State B. This variable is based on the date of initial cruise missile acquisition and lagged one year in the statistical calculations to account for the temporality of the data to ensure I test for the cruise missile's influence on conflict and not conflict's influence on the acquisition of cruise missiles. I separately code the dichotomous possession of land attack cruise missiles, lagged, to capture any specific and separate effects of possessing the more advanced capabilities these cruise missiles provide as $lacma_{(t-1)}$ for State A and $lacmb_{(t-1)}$ for State B. I establish land attack cruise missile possession based on information provided by Werrell (1985, 1989), Defense Industry Daily (2005), the Stockholm International Peace Research Institute's Arms Transfer Database (2015), The Defense Intelligence Ballistic Missile Analysis Committee (2017), The Center for Strategic and International Studies (2018), and the Missile Defense Advocacy Alliance (2018).

Dependent Variables

I use two dependent variables to capture the cruise missile's effect on state behavior: the use of military force and the use of threats or displays of force. The primary dependent variable for Hypothesis 1 is the use of military force. I capture the

use of force in two ways, using two popular conflict data sets, the ICB data set and MID data set, to replicate my findings using different measurements of conflict. First, borrowing from Mettler and Reiter's (2013) converted ICB data set, I code for their variable, *chall*, using the initiation of an ICB challenge in an international crisis with the variable, *ICBchallenge*, as my first dependent variable. The ICB Project identifies two conditions of an international crisis. First, a crisis constitutes, "a change in type and/or an increase in intensity of disruptive, that is, hostile verbal or physical, interactions between two or more states, with a heightened probability of military hostilities." (Brecher and Wilkenfeld 2000, 4). The second condition notes that military hostility, "destabilizes their relationship and challenges the structure of an international system – global, dominant, or subsystem." (Brecher and Wilkenfeld 2000, 5).

The ICB data set neither identifies conflictual dyads nor identifies the challenger. This lack of fidelity requires a unique coding scheme to properly identify which state initiates the challenge and which state is the defender. As such, I follow Mettler and Reiter's coding to distinguish between challenger and defender.²¹ The challenger, or initiator, (State A) is the state that first threatened, mobilized forces, or used violence against the defender (State B). In situations in which a state initiates force against another state in response to *a priori* sub-state acts of violence on its territory, the first state is coded as the challenger. In situations in which a state challenges another state and a third state intervenes on the second state's behalf, the third state is also coded as a

²¹ For details about the ICB-derived coding used in this research, including alterations to adjust for the non-dyadic nature of the ICB data set in accordance with Rousseau, Gelpi, Reiter, and Huth (1996) and Gelpi and Greico (2001), reference Mettler and Reiter (2013).

dyadic challenger to the first state. I drop ICB crises that involved only intrastate violence.

In addition to employing dyad-clustered robust standard errors, to ensure the robustness of these results I duplicate my analysis using MID data supplied by the Correlates of War Project (Palmer et al. 2015). Projects based on either MID or ICB data rarely have divergent findings. However, differences do arise when accounting for the importance of state parity (as in MID data) or the connection between capabilities and crisis escalation (Vasquez 2000). Considering these differences, the use of MID data, in parallel with ICB data to cross-check the strength of the results, strengthens the validity of the empirical results.

For the MID data, I follow Lai and Slater (2006), Weeks (2012, 2014), and Kim (2017) by coding a MID dependent variable, *MIDinitiation*, for dispute initiation from the conflict years identified by the MID data set and coded using the Expected Utility Generation and Data Management Program v3.212 (EUGene) (D. S. Bennett and Stam 2000a; Palmer et al. 2015). Jones, Bremer and Singer (1996) defined a militarized interstate dispute as, “united historical cases in which the threat, display or use of military force short of war by one member state is explicitly directed towards the government, official representatives, official forces, property, or territory of another state.” (168) The MID-derived dependent variable, *MIDinitiation*, captures this definition by coding for actions that include the threat to use force, the display of force, the use of force (not including war), and war (Palmer et al. 2015). In the MID data set, this includes hostilities coded for the MID variable, *HostLev*, as a 2 (threat to use force) or greater. I code the variable, *hostility*, to capture values indicating no militarized action equal to one for the

multinomial logistic regression model. Although the dispute initiator is clearly coded, this may not be the side directly responsible for the conflict as a whole, as each case is context dependent and vulnerable to perceptions, third party influences, and political biases (Ghosn, Palmer, and Bremer 2004).

I use a second dependent variable to measure threats and displays of force to test whether cruise missile effects are limited to the use of military force, or whether their possession also heightens the risk conflict at lower levels of hostility. The second hypothesis posits that cruise missile possession increases the likelihood states will initiate crisis through the threat or display of force. To test this proposition, I use the MID variable, *hostility*, as a categorical dependent variable in a multinomial logit model to measure the hostility level reached in each dyadic dispute. The variable is coded 1 for no militarized action, 2 for threats to use force, 3 for displays of force, 4 for the use of force short of war, and 5 for war (Palmer et al. 2015). Definition and coding rules for each hostility level are in accordance with Jones et al. (1996). Threats include explicit threats to use armed force. Displays include mobilization of forces. Use of force is defined as, “armed force, but short of the sustained combat that characterized as war.” (D. M. Jones, Bremer, and Singer 1996, 167). Finally, war includes those disputes involving sustained overt combat operations resulting in over 1,000 battle deaths between two states.

Hypothesis 3 is a null hypothesis that predicts there is no difference between the probabilities that democratic or autocratic states with cruise missiles will use military power to achieve foreign policy objectives. To test this hypothesis, I again utilize the ICB – derived *ICBchallenge* dependent variable with the addition of the MID – derived *MIDinitiation* dependent variable as a robustness check. The independent variables,

regime type and cruise missile possession, are defined and coded using the dichotomous variable, *democracy*, derived from the Democracy-Dictatorship data set (Cheibub, Gandhi, and Vreeland 2010) in interaction with the dichotomous *cruise_(t-1)* variable to identify democracies and autocracies who are with and without cruise missiles. The minimalist approach taken by the Democracy-Dictatorship data set emphasizes the capacity of domestic institutions to remove governments from power by parsimoniously grounding its coding of regime type in the ability of contested elections to remove executive and legislative officers from power. The advantage of using this data set instead of the Polity 4 data set (Marshall, Gurr, and Jaggers 2016), used to control for joint democratic dyads in the general force initiation model (see below), is that the observational nature of the data makes it more reproducible across different objectives and its coding system consists of attributes that are identifiable and considered important by many researchers (Cheibub, Gandhi, and Vreeland 2010).

Control Variables

In addition to the hypothesized dependent and independent variables, I include control variables widely considered standard in research regarding militarized disputes between states in building a behavioral model. These control variables approximate factors generally accepted in conflict studies to influence the use of military force to achieve foreign policy objectives. The regressors include ballistic missile and nuclear weapon possession; major power status; economic development; geographic contiguity; regime type; and the number of years since the last conflict transpired.

Mettler and Reiter (2013) uncovered a positive relationship between possession of ballistic missiles and conflict initiation. They noted that both the military capabilities,

increased striking power, and prestige associated with the possession of ballistic missile technology place the possessor in a greater bargaining position. Mettler and Reiter found ballistic missile possession is associated with a 266 percent greater likelihood that a state will initiate a crisis as compared to states without ballistic missiles. Therefore, I control for a state's possession of ballistic missiles within range of their dyadic partner using the variable *BallisticMissile_(A)*, for the initiator state, and *BallisticMissile_(B)* for the defender state to represent the years the states possessed ballistic missiles capable of striking each other.

Although debate exists (e.g. Sagan and Waltz 2013), researchers have found nuclear states are more willing to act belligerently (Feaver 1992, 1995; Jervis 1976; Sagan 1994), while others have found a shift in the demands and limited risks associated with military aggression when nuclear weapons are involved (Gaddis 1986; Jervis 1989b, 1989a, 1989c, R. Powell 1988, 1990; Schelling 2008; Snyder and Diesing 1977; Waltz 1990). Still others believed nuclear weapons push conflict initiation to lower levels, driving a stability-instability paradox (Ganguly and Wagner 2004; Kapur 2005; V. Narang 2009; Rauchhaus 2009; Snyder 1965). States with nuclear weapons may also decide to procure cruise missiles as delivery vehicles. For this research, I control for nuclear weapon possession using the dichotomous variable *Nuclear_(A)*, for the initiator state, and *Nuclear_(B)* for the defender state to represent the years the state possessed nuclear weapons, lagged by 1 year. I use nuclear weapon proliferation data assembled and coded by Gartzke and Kroenig (2009) to establish acquisition and forfeiture. I code nuclear possession as the year a state first assembles a weapon capable of being used

against an enemy target until the year they began dismantling their program (e.g. South Africa, 1982 to 1990)

Wealthier states and states capable of projecting power define their interests globally, tending to invest in military capabilities to protect their interests. Consequently, a high level of material capability and resources are a strong predictor of crisis involvement (Boulding 1962; Bremer 1992; Schultz 2001). I capture each of these confounds using four distinct variables. Major power status for the initiating state is controlled using the CoW dummy variable, *MajorPower*. I code the power parity between states, *PowerParity*, using the Mettler and Reiter (2013) *cincparity* variable. This variable ranged from 0 to 1 and is measured using the CoW Composite Index of National Capability (CINC) scores from CoW's National Material Capabilities data set, version 4.0.

The physical distance from adversaries may also play a role in state behavior (Joyce and Braithwaite 2013; Owsiak and Rider 2013; Rider and Owsiak 2015; Vasquez 1995; Vasquez and Henahan 2001). Geographic contiguity is controlled using the CoW categorical variable, *contig*, which captures states who share a border within politically relevant intervals of distances up to 400 miles to capture immediate borders and second and third order borders such as regions (Diehl 1985; Huth 1996; Kocs 1995; O'Loughlin 1986; Reed and Chiba 2010; Stinnett et al. 2002). Contiguity is coded 1 if a land border connects the dyadic state pairs, 2 if 1-12 miles of water separate the states, 3 if 13-24, 4 if 25-150, 5 if 151-400 miles of water, and 6 if the states are not at all connected. Additionally, assuming the greater the overall distance between states, the less the likelihood of conflict given the greater resources required to project power (Boulding

1962; Bueno de Mesquita 1983; Joyce and Braithwaite 2013), I capture the minimum distance between states with the variable, *distance*, based on the Mettler and Reiter (2013) variable, *sqrctmindist*, coded as the square root of the minimum distance between states as measured by the CShapes data set (Weidmann, Kuse, and Gleditsch 2010).

Regime type may also affect conflict propensity. Autocracies may be more likely to use military force than democracies (Bremer 1992; Debs and Goemans 2010; Kim 2017; J. L. P. Weeks 2012), although variations in institutional constraints may better explain a state's conflict propensity (Dixon 1994; Fearon 1998; Maoz and Russett 1993; T. C. Morgan and Campbell 1991; Reiter and Stam 1998; B. Russett et al. 1995; B. M. Russett 1990, 1993). To control for regime type in the general force initiation model, I follow Mettler and Reiter's (2013) use of the variable, *jointdemocracy*, to measure whether each state in the dyad was coded greater than 6 using the Polity 4 data set variable, *polity2*, the revised and combined measure of regime type variability for time series analysis (Marshall, Gurr, and Jagers 2016). By choosing Mettler and Reiter's measurement of joint democratic dyads as a control variable, rather than the *democracy* independent variable I use to test Hypothesis 3, I can consistently compare my results using cruise missile variables with their findings using ballistic missile variables. With this method, I can more reliably identify inconsistencies and draw conclusions between my research and Mettler and Reiter's.

The probability of crisis initiation in any given year may be a product of how recently the dyad last experienced a crisis. The length of time since the last crisis is proportionally related to the whether a state will engage in its next conflict. States recently concluding a conflict should be less likely to engage in a new conflict (Beck,

Katz, and Tucker 1998). Failing to account for the effects of time may result in bias by underestimating the true standard errors (Magee and Massoud 2011; Schultz 2001). To account for this potential confounding variable, I exercise Carter and Signorino's (2010) alternative to Beck, Katz, and Tucker's (1998) method of modeling time dependence using splined time in logistic regression. This alternative uses a cubic polynomial approximation to capture the change in phenomena over time. For my model, I code for peace years, or the number of years since the last dyadic crisis, by including variables for the number of peace years, peace years squared, and peace years cubed.

Endogeneity

Finally, given that cruise missiles do not proliferate randomly throughout the world and states may obtain cruise missiles for reasons related to conflict itself, the problem of endogeneity must be addressed. To account for possible selection effects arising from the non-random selection of variables, I use a multivariate probit model to predict the potential challenger's and defender's acquisition of cruise missiles. By accounting for factors relating to the acquisition of weapon systems, I endogenize the procurement process to predict with greater confidence that the cruise missiles were not the result of *a priori* decisions to use military force for a future coercion scenario. I use four regressors to predict the challenger's and defender's acquisition of cruise missiles.

The first regressor for predicting cruise missile acquisition accounts for membership in the Missile Technology Control Regime (MTCR). The purpose of the MTCR is to, "limit the risks of proliferation of weapons of mass destruction (i.e. nuclear, chemical and biological weapons), by controlling [weapon] transfers that could make a contribution to delivery systems (other than manned aircraft) for such weapons."

(Government of Canada 2017, 8) As a non-binding agreement between member states, the MTCR accomplishes its goal of limiting proliferation by monitoring and restricting the trade of known delivery systems such as ballistic missiles and cruise missiles. Membership in the MTCR ideally constrains the proliferation of cruise missiles and associated dual-use technology (W. Q. Bowen 1997; Mistry 1997, 2002, 2003). To account for this factor, I use Barkley's (2008) and Mettler and Reiter's (2013) method of measuring the fraction of the world's gross domestic product (GDP) that is accounted for by members of the MTCR with the variable *mtcr*.

Next, I account for states' economic development. States that acquired cruise missiles require a sufficient scientific and industrial base to operate and maintain these weapons, at a minimum, and at higher ends of economic development, create indigenous programs (Gormley 2008b). Comparable to Jackman's (1973) use of logging GDP per capita, the variable used in each equation to factor for economic development is *capabilities*, which I base on the Mettler and Reiter (2013) variable, *lnencapa*. The *capabilities* variable is the logged per capita energy consumption of the challenger and defender.

The third variable used to regress cruise missile acquisition approximates major power status. States with the ability to project power tend to define their interests globally requiring weapons capable of such power projection (Schultz 2001). China's exploitation of cruise missiles to assert territorial claims in the South China Sea exemplifies this concept (Blair 2008; Gormley, Erickson, and Yuan 2014; Heginbotham et al. 2015; U.S. Department of Defense 2013). In cruise missile acquisition equations for both the potential challenger and defender, I use the CoW major power status

variable, coded as $MajorPower_{(A)}$, to capture major power status of State A, or $MajorPower_{(B)}$ for State B (Correlates of War Project 2017).

The final variable used to estimate cruise missile acquisition is whether the state has nuclear weapons. Some cruise missiles can deliver nuclear weapons. Consequently, states armed with nuclear weapons may have an increased desire to possess delivery systems such as cruise missiles. Their importance in this mission is evident when observing their role in nuclear negotiation between the United States and the Soviet union in the 1980s and the recent concern that Russia is violating the Intermediate-Range Nuclear Forces Treaty (INF Treaty) by fielding a new prohibited class of cruise missile (Pleitgen, Eshchenko, and Smith-Spark 2017). I use the state's nuclear weapon status in acquisition equations for both the potential challenger and defender.

Phase I Empirical Results

Descriptive Statistics

Table 3.2 displays the summary statistics for the general model of cruise missile possession and conflict. The data set consists of 1.1 million ICB and MID dyad-years spanning 1946 to 2007. During this time, the ICB data set records 378 challenges; the CoW MID data set records 2,742 MID initiations. Although these numbers may seem impressive, conflict is a rare event. In this data set, ICB challenges comprised only .03 percent of the total ICB observations. MID initiations comprised .2 percent of the total MID observations. States possessed cruise missiles in 28 percent of the total observations, far outpacing the possession of ballistic missiles which comprise 2.7 percent of observations. Notably, the ICB challenge variables terminated in 2007, while

the MID data reflecting militarized initiations of conflict terminated in 2010. Cruise missile, major power status, and regime type data extended into 2015. However, due to limitations in how the statistical software analyzes data, I base my conclusions on only those observations for which there exists complete data. Therefore, these summary statistics include only those data ranging from 1946 to 2007.

Table 3. 2 Summary Statistics for the Cruise Missile Conflict Models, 1946-2007

Variable	N	Mean	Std. Dev.	Min	Max
ICB Challenge	1,108,572	0.0003	0.0181	0	1
MID Initiation	1,108,572	0.0023	0.0474	0	1
Cruise Missiles, State A	1,108,572	0.2802	0.4491	0	1
Cruise Missiles, State B	1,108,572	0.2734	0.4491	0	1
Ballistic Missiles, State A	1,108,572	0.0266	0.1609	0	1
Ballistic Missiles, State B	1,108,572	0.0266	0.1609	0	1
Nuc. Weapons, State A	1,108,572	0.0368	0.1884	0	1
Nuc. Weapons, State B	1,108,572	0.0368	0.1884	0	1
Distance	1,108,572	76.3648	29.9547	0	139
Contiguity	1,108,572	5.8675	0.7554	1	6
Power Parity	1,108,572	0.2439	0.2681	2.08 ⁻⁶	1
Major Power, State A	1,108,572	0.036	0.1864	0	1
Joint Democracy	1,108,572	0.1521	0.3591	0	1

Note: Peace year variables are omitted.

In addition to the logit and probit analysis that follows, I examine descriptive statistic contingency tables to explore differences, if any, in the incidence of conflict initiation between cruise missile-equipped and non-cruise missile-equipped states. Table 3.3 shows the contingency table for both the ICB challenge and MID initiation dependent variables by whether states possess cruise missiles. As hypothesized, there is a significant and positive relationship between cruise missile possession and the ICB challenges, $X^2(1) = 120.339$, $p < .001$. Additionally, consistent with the ICB-derived results, there is a significant and positive relationship between cruise missile possession

and MID initiations, $X^2(1) = 822.047$, $p < .001$. States possessing cruise missiles have a greater incidence of force initiation than states without cruise missiles. Most striking, states possessing cruise missiles initiate conflict at a rate 2.8 times greater than that of non-cruise missile states for ICB challenges and MID initiations.

Table 3. 3 Force Initiation and Cruise Missile Possession

ICB Challenge	Non-cruise missile state	Cruise missile state	MID Initiation	Non-cruise missile state	Cruise missile state
No challenge	906262*** (99.98)	376218*** (99.94)	No initiation	1015685*** (99.873)	426492*** (99.642)
Challenge	181*** (0.02)	216*** (0.057)	Initiation	1296*** (0.127)	1534*** (0.358)
Total	906443	376434	Total	1016981	428026

Note: *** $p < .001$, Percentages in parentheses.

We can also explore the relationship for states that possess land attack cruise missiles. Since the early 1990s, the use of land attack cruise missiles has increased commensurate with advances in navigation, stealth, and precision targeting. To determine whether the more advanced and capable land attack cruise missiles may be correlated with conflict initiation, I examine contingency tables. Table 3.4 shows the contingency table for both the ICB challenge and MID initiation variables as compared to states in possession and not in possession of land attack cruise missiles. There is a clear positive relationship between possession and force initiation with land attack cruise missiles using both the ICB challenge dependent variable, $X^2(1) = 360.88$, $p < .001$, and the MID initiation dependent variable, $X^2(1) = 952.705$, $p < .001$. Therefore, based on the descriptive statistics, states armed with land attack cruise missiles initiate ICB challenges 9.7 times more often and MID initiations 5.6 times more often than states without these missiles.

Table 3. 4 Force Initiation and Land Attack Cruise Missile Possession

ICB Challenge	Non-LACM state	LACM state	MID Initiation	Non-LACM state	LACM state
No challenge	1261896*** (99.973)	20,584*** (99.738)	No initiation	1414451*** (99.82)	27726*** (99.00)
Challenge	343*** (0.027)	54*** (0.262)	Initiation	2549*** (0.18)	281*** (1.00)
Total	1262000	20638	Total	1417000	28007

Note: *** p<.001. Percentages in parentheses.

Regression Models of Force Initiation

I turn now to models that can accommodate controls for potential confounds, and accordingly use probit, logistic regression (logit), and fixed effects models to test the validity of Hypothesis 1, that states armed with cruise missiles are more likely to exercise military force to coerce their adversaries than states that do not have cruise missiles.

Table 3.5 presents the results of the three models in which the dependent variable is an ICB challenge. I replicate these models for robustness using the alternative dependent variable, MID initiation, in Table 3.6. Because I follow Mettler and Reiter's (2013) models and use of control variables, I use a probit analysis in the first model to maintain comparability to that research, but compare these results with logit and fixed effects models in subsequent tests while testing for multicollinearity using a correlation matrix. Probit and logit models differ in how they define the function of the logistic distribution, yet generally yield substantively similar, though not identical, results. Though probit models are popular in political science, logit models produce coefficients that can be interpreted in terms of odds ratios and smaller Chi-squared sampling errors (Berkson 1946, 1951). To compare and cross check the results of each model, I report both.

I estimate fixed effects models (using the dyad as the unit of analysis) in order to control for cross-unit heterogeneity.²² This method allows for the control of all stable characteristics among the dyads in the data set, even those which could not be measured (Allison and Christakis 2006; Chamberlain 1979; Katz 2001). To test whether cruise missile states are more likely to engage in an ICB challenge, I compare the coefficients of each variable, reporting the associated p-value of the two-tailed Wald tests to assess the statistical significance of the differences at the bottom of the table.

As hypothesized, each of the three models using the ICB dependent variable in Table 3.5 indicate there was a positive and significant relationship between State A's possession of cruise missiles and the probability of exercising military force. Using odds ratios derived from Model 2, states in possession of cruise missiles are at 2.42 times greater odds of initiating an ICB challenge compared to states that do not possess cruise missiles ($p < .001$). A marginal effects analysis of Models 1 and 2 shows the probability of an ICB challenge when State A does not have cruise missiles is .02 percent, but when State A acquires cruise missiles, this probability almost triples to .05 percent ($p < .001$). As expected, State A ballistic missile possession has positive and statistically significant coefficients, and negative and statistically significant coefficients for State B, consistent with existing research (Mettler and Reiter 2013). Multicollinearity tests using a correlation matrix contain no indication of error due to covariates.

²² Results for the Hausman Specification Test (Hausman 1978), used to determine whether a fixed or random effects model is appropriate based on retention or rejection of the test's null hypothesis, indicated the fixed effects model is appropriate for analyzing these models using either the ICB ($X^2(13)=226.45, p < .001$) and MID ($X^2(11)=2158.42, p < .001$) dependent variables.

Table 3.5 The Effects of Cruise Missiles on ICB Challenges, 1946-2007

	Model 1 Probit	Model 2 Logit	Model 3 Fixed Effects
Cruise Missiles, State A	0.296*** (0.048)	0.882*** (0.142)	0.352** (0.162)
Cruise Missiles, State B	0.120** (0.057)	0.370** (0.171)	-0.305 (0.159)
Ballistic Missiles, State A	0.263*** (0.069)	0.713*** (0.191)	0.660*** (0.218)
Ballistic Missiles, State B	-0.341** (0.103)	-1.147*** (0.343)	-0.931*** (0.245)
Nuc. Weapons, State A	0.050 (0.145)	0.084 (0.413)	-0.829*** (0.305)
Nuc. Weapons, State B	0.575*** (0.093)	1.516*** (0.322)	-0.167 (0.326)
Distance	-0.012*** (0.002)	-0.044*** (0.007)	-0.121** (0.048)
Contiguity	-0.108*** (0.020)	-0.253*** (0.071)	0.067 (0.138)
Power Parity	0.100 (0.080)	0.234 (0.242)	-1.297** (0.561)
Major Power, State A	0.280 (0.152)	0.748 (0.441)	0.061 (0.397)
Joint Democracy	-0.398*** (0.099)	-1.196*** (0.334)	-0.359 (0.322)
Additional Controls	...	...	...
Constant	-2.030*** (0.075)	-3.783*** (0.207)	
Log Likelihood	-2325.778	-2342.5594	-1362.9344
Chi-Square (14)	1138.60***	1563.90***	163.20***
Pseudo-R ²	.29	.29	.06
Observations	1,108,572	1,108,572	16,875

Note: Robust standard errors in parentheses. In addition to the control variables reported in the table, each model includes temporal controls for the years since the last conflict initiation and cubic splines of that variable.

Significance: *** p<0.001, ** p<0.05 using a two-tailed test.

I replicate the results of the ICB analysis with MID data in Table 3.6. The MID data set contains 2,742 positive observations for a militarized initiation of force as

compared to the 378 ICB challenges. One reason for this discrepancy in the number of observations, besides the slightly different measurements of the dependent variable, is that the MID data set often codes initiators and hostility level data for each year of a conflict as situations change, whereas the ICB data set may only code for the most significant challenge in the event. As a result, the MID data set may provide more granular data and consequently more observations. For example, between 1982 and 1988, the MID data set codes each year of the American involvement in the Nicaragua's Contra War, varying between initiators depending on each year's situation. However, the ICB data set only codes one year, 1984, as a challenge. In this year, the United States increased the number and visibility of nearby military exercises in response to a suspected shipment of advanced fighter aircraft from the Soviet Union to Nicaragua. This display of force coerced the Soviet Union to cancel the shipment (Brecher et al. 2017).²³ American signals of imminent invasion instigated a crisis for Sandinista government and recorded as a data point for the ICB data set. By replicating the models for each measurement of the dependent variable across the two data sets, we may be assured of the results by accounting for both single instances of an ICB challenge, or granular MID initiations.

²³ As it turns out, the Soviet Union did not ship the aircraft as suspected, diffusing the situation.

Table 3. 6 The Effects of Cruise Missiles on MID Initiations, 1946-2007

	Model 4 Probit	Model 5 Logit	Model 6 Fixed Effects
Cruise Missiles, State A	0.355*** (0.033)	0.913*** (0.093)	0.583*** (0.065)
Cruise Missiles, State B	0.190*** (0.036)	0.505*** (0.098)	-0.050 (0.065)
Ballistic Missiles, State A	0.094 (0.077)	0.177 (0.194)	0.209** (0.090)
Ballistic Missiles, State B	-0.056 (0.071)	-0.218 (0.189)	-0.327*** (0.096)
Nuc. Weapons, State A	-0.102 (0.132)	-0.080 (0.382)	-0.529*** (0.127)
Nuc. Weapons, State B	0.468*** (0.083)	0.935*** (0.243)	-0.479*** (0.130)
Distance	-0.009*** (0.001)	-0.031*** (0.003)	0.028** (0.011)
Contiguity	-0.157*** (0.015)	-0.315*** (0.042)	-0.013 (0.058)
Power Parity	0.287*** (0.067)	0.650*** (0.190)	-0.121 (0.191)
Major Power, State A	0.656*** (0.138)	1.369*** (0.402)	0.054 (0.140)
Joint Democracy	-0.409*** (0.059)	-1.099*** (0.183)	0.120 (0.117)
Additional Controls	...	...	...
Constant	-1.337*** (0.075)	-2.233*** (0.181)	
Log Likelihood	-12584.691	-12708.308	-7456.3698
Chi-Square (14)	1437.37***	1859.73***	472.25***
Pseudo-R ²	.29	.28	.03
Observations	1,108,572	1,108,572	50,720

Note: Robust standard errors in parentheses. In addition to the control variables reported in the table, each model includes temporal controls for the years since the last conflict initiation and cubic splines of that variable.

Significance: *** p<0.001, ** p<0.05 using a two-tailed test.

As hypothesized and consistent with the ICB models in Table 3.5, each of the three models using the MID dependent variable in Table 3.6 indicate there is a positive and significant relationship between State A's possession of cruise missiles and that state's likelihood of initiating a MID to coerce adversaries. Commensurate with the results from the ICB models (Model 2 of Table 3.5), states in possession of cruise missiles are 2.49 times more likely to initiate a MID than states that do not possess cruise missiles ($p < .001$). A marginal effects analysis of Models 4 and 5 shows the probability of a MID initiation before State A acquires cruise missiles is .2 percent, but that probability doubles to .4 percent ($p < .001$) after acquisition. In step with previous results, there is a positive, though weaker, and significant relationship associated with State B's possession of cruise missiles in the probit and logit models. However, the coefficient loses significance in the fixed effects model. Surprisingly, ballistic missile possession by State A and B lost significance in the probit and logit models, challenging Mettler and Reiter's (2013) ICB-based conclusions. As before, multicollinearity tests indicate a low likelihood of error due to covariates.

To specifically capture effects from the less prolific land attack cruise missile, I replicate the cruise missile models using original data collected for land attack cruise missile possession. For this model, I use a probit model to test both ICB and MID data. Although there is a positive and significant correlation between land attack cruise missiles and ICB challenges in Model 7, Model 9 is not significant when using the MID initiation dependent variable.

Table 3. 7 The Effects of Land Attack Cruise Missiles on Conflict, 1946-2007

	Model 7	Model 8	Model 9	Model 10
	ICB	ICB Pen.	MID	MID Pen.
	Probit	Likelihood	Probit	Likelihood
		Logit		Logit
LACM, State A	0.242** (0.112)	0.528** (0.217)	0.111 (0.087)	0.259** (0.098)
LACM, State B	0.042 (0.164)	-0.160 (0.319)	0.369*** (0.101)	0.848*** (0.118)
Ballistic Missiles, State A	0.406*** (0.073)	1.183*** (0.178)	0.268** (0.081)	0.649*** (0.080)
Ballistic Missiles, State B	-0.261** (0.105)	-0.867*** (0.235)	0.020 (0.080)	0.036 (0.088)
Nuc. Weapons, State A	0.070 (0.153)	0.241 (0.293)	-0.057 (0.139)	0.102 (0.126)
Nuc. Weapons, State B	0.570*** (0.100)	1.586*** (0.236)	0.360*** (0.087)	0.679*** (0.105)
Distance	-0.012*** (0.002)	-0.044*** (0.004)	-0.009*** (0.001)	-0.032*** (0.001)
Contiguity	-0.105*** (0.020)	-0.250*** (0.040)	-0.151*** (0.015)	-0.306*** (0.015)
Power Parity	0.099 (0.080)	0.267 (0.189)	0.289*** (0.067)	0.675*** (0.072)
Major Power, State A	0.191 (0.157)	0.475 (0.276)	0.596*** (0.149)	1.139*** (0.114)
Joint Democracy	-0.386*** (0.103)	-1.143*** (0.239)	-0.394*** (0.061)	-1.045*** (0.082)
Additional Controls	...	...	...	...
Constant	-1.973*** (0.078)	-3.596*** (0.171)	-1.275*** (0.076)	-2.050*** (0.071)
Log Likelihood	-2349.037	-2316.036	-12780.447	-12840.618
Chi-Square (14)	1198.45***	1748.34***	1425.01***	10102.49***
Pseudo-R2	.28		.28	
Observations	1,108,572	1,108,572	1,108,572	1,108,572

Note: Robust standard errors in parentheses. In addition to the control variables reported in the table, each model includes temporal controls for the years since the last conflict initiation and cubic splines of that variable.

Significance: *** p<0.001, ** p<0.05 using a two-tailed test.

As noted, only eleven states in our sample possessed land attack cruise missiles in the period 1946 to 2007. The low percentage of observations could constitute a threat to inference. To account for potential bias due to the limited number of cruise missile states as compared to the greater number of MID initiations, I used a penalized maximum likelihood logistic regression (Firth 1993; King and Zeng 2001; Tomz, King, and Zeng 2001). These results, displayed in Table 3.7, are significant, positively signed, and commensurate with the other models used here. Correcting for bias, the positive and significant results suggest the possession of land attack cruise missiles also increase the likelihood a state will initiate conflict.

Threats, Displays, and Uses of Force

A state does not necessarily need to physically attack an adversary to coerce the adversary into yielding to the state's will. Instead, the state may use its power at lower levels of violence including threats, displays, or uses of military force (D. M. Jones, Bremer, and Singer 1996; Slantchev 2006b, 2011). Having established that states with cruise missiles are more likely to use force, Hypothesis 2 expands on this concept by positing that cruise missile possession not only increases the likelihood of force, but also predicts whether states might initiate crisis at lower levels, or through the threat or display of force. To test this hypothesis, I use a multinomial logistic regression model. The multinomial logistic regression model enables the analysis of each predictor variable referenced to a response variable and its associated model. In this model, I reference each level of hostility against a base level of no militarized action using the *hostility* variable. This method makes it possible to predict a state's preference to use threats or displays of force instead of no militarized action, given the proposed cruise missile

possession model used in this research. However, unlike the other analyses used here, I do not replicate these results using ICB data. The ICB data set does not contain variables measuring threats or displays of force. Rather, the ICB data set uses various measurements of violence (e.g. minor clashes, serious clashes, full-scale war), which do not capture the less-than-violent definitions used in Hypothesis 2.

Table 3. 8 Cruise Missile Possession and MID Hostility Level, 1946-2007

Dependent Variable:	Model 11 Threat to use force	Model 12 Display of force	Model 13 Use of force	Model 14 War
Base: No Mil. Action				
Cruise Missiles, State A	0.836** (0.346) <i>2.306</i>	0.955*** (0.126) <i>2.599</i>	0.740*** (0.085) <i>2.096</i>	0.641*** (0.154) <i>1.898</i>
Cruise Missiles, State B	0.853** (0.358) <i>2.348</i>	0.992*** (0.128) <i>2.697</i>	0.749*** (0.086) <i>2.114</i>	0.702*** (0.158) <i>2.017</i>
Ballistic Missiles, State A	0.629 (0.382) <i>1.875</i>	0.158 (0.201) <i>1.171</i>	-0.236 (0.164) <i>0.79</i>	0.021 (0.314) <i>1.021</i>
Ballistic Missiles, State B	0.871** (0.350) <i>2.388</i>	0.456** (0.185) <i>1.578</i>	0.009 (0.153) <i>1.009</i>	0.533* (0.296) <i>1.703</i>
Nuc. Weapons, State A	-0.809 (0.708) <i>0.445</i>	-0.215 (0.298) <i>0.806</i>	0.171 (0.302) <i>1.186</i>	-0.759* (0.412) <i>0.468</i>
Nuc. Weapons, State B	0.210 (0.488) <i>1.234</i>	0.965*** (0.234) <i>2.625</i>	1.072*** (0.191) <i>2.920</i>	0.955*** (0.367) <i>2.6</i>
Distance	-0.045*** (0.015) <i>0.956</i>	-0.040*** (0.004) <i>0.961</i>	-0.033*** (0.004) <i>0.967</i>	-0.022*** (0.005) <i>0.979</i>
Contiguity	-0.052 (0.154) <i>0.949</i>	-0.271*** (0.050) <i>0.763</i>	-0.377*** (0.051) <i>0.686</i>	-0.197*** (0.076) <i>0.821</i>
Power Parity	0.055 (0.608) <i>1.056</i>	0.740** (0.288) <i>2.095</i>	0.503** (0.217) <i>1.653</i>	1.418*** (0.326) <i>4.129</i>

Major Power, State A	1.375** (0.656) <i>3.954</i>	1.642*** (0.299) <i>5.167</i>	1.260*** (0.313) <i>3.525</i>	2.475*** (0.409) <i>11.88</i>
Joint Democracy	-0.773 (0.742) <i>0.462</i>	-0.619*** (0.232) <i>0.539</i>	-1.246*** (0.231) <i>0.288</i>	-1.600*** (0.398) <i>0.202</i>
Additional Controls	...	...	...	...
Constant	-6.510*** (0.746)	-3.787*** (0.258)	-1.544*** (0.200)	-4.096*** (0.423)
Observations	1,108,572	1,108,572	1,108,572	1,108,572

Note: Robust standard errors in parentheses. A Relative Risk Ratio (in italics) score >1 indicates the outcome is more likely (at greater risk) to result in the DV outcome than the base group (no militarized action). In addition to the control variables reported in the table, each model includes temporal controls for the years since the last conflict initiation and cubic splines of that variable.

Significance: *** p<0.001, ** p<0.05 using a two-tailed test.

$X^2(56) = 3120.29, p < .001$

As hypothesized, cruise missile possession has a positive and significant effect on the use of threats or displays of force, as reported in Table 3.8. Furthermore, the multinomial logistic regression model also confirms the previously established correlation between cruise missile possession and the use of force in a militarized interstate dispute. Separate analysis of the reported relative risk ratios for the cruise missile possession variable confirms that across all measurements of MID hostility, states with cruise missiles are more likely than states without cruise missiles to choose threats, displays of force, force, or war to no militarized action at all. Relative risk ratios are, “the likelihood of [an] occurrence after exposure to a risk variable as compared with the likelihood of its occurrence in a control or reference group.” (Chittaranjan 2015, 858). Specifically, when a state acquires cruise missiles, its risk of resorting to threats increases 231 percent. The risk of displaying force increases 260 percent. Additionally, the risk of resorting to force or going to war is approximately two times as high as a state without

cruise missiles. Notably, the significant negative coefficient and low relative risk ratio score on the joint democracy variable also provides some support for the democratic peace theory.²⁴ However, as was the case in the previous analysis, Mettler and Reiter's (2013) findings continue to struggle using MID data for the dependent variable. Ballistic missile possession by the initiating state is not significantly correlated with threats, displays, uses of force, or war. On the other hand, target states with ballistic missiles may be at a statistically significant risk of being the target of threats and display of force. This risk could be attributed to counter ballistic missile proliferation efforts by other states.

Endogeneity and Selection Effects

Having established empirical evidence supporting the hypothesis that states armed with cruise missiles are more likely to use military force than states that do not have cruise missiles, I next investigate the possibility that the models suffer from endogeneity bias. Endogeneity may occur when treatments, in this case cruise missile acquisition, are not randomly assigned to the population. Sample selection bias may occur for two reasons (Heckman 1979). First, the individuals under investigation may self-select into the sample. Second, sample selection decisions by the researcher may operate to parallel the results of self-selection into the sample. The observations used in this panel data were not randomly assigned. Therefore, it is important to determine if states who acquire cruise missiles are not significantly predisposed to initiating conflict, regardless of their possession of cruise missiles. To separate the decision to acquire cruise missiles from the

²⁴ For more on democratic peace, the theory that democracies tend to not make war on one another, see Babst (1964), Doyle (1983b, 1983a), Russett (1995), and Maoz and Russett (1993). For critiques, see Gowa (1998; 1999) and Rosato (2003).

decision to initiate militarized conflict, I follow Mettler and Reiter's (2013) strategy of endogenizing weapon acquisition. I use a three-equation multivariate probit model to first endogenize State A and State B's decision to acquire cruise missiles, then predict State A's likelihood of initiating a challenge (Chib and Greenberg 1998).

Table 3.9 Three Equation Probit Model of Cruise Missile Acquisition and Conflict

	Model 15 ICB Challenge	Model 16 MID Initiation
ICB Challenge / MID Initiation DV		
Cruise Missiles, State A	0.293*** (0.048)	0.348*** (0.033)
Cruise Missiles, State B	0.111** (0.057)	0.183*** (0.036)
Ballistic Missiles, State A	0.263*** (0.069)	0.092 (0.077)
Ballistic Missiles, State B	-0.341*** (0.103)	-0.051 (0.071)
Nuc. Weapons, State A	0.041 (0.146)	-0.097 (0.134)
Nuc. Weapons, State B	0.577*** (0.093)	0.470*** (0.083)
Distance	-0.012*** (0.002)	-0.009*** (0.001)
Contiguity	-0.108*** (0.020)	-0.156*** (0.015)
Power Parity	0.089 (0.081)	0.288*** (0.067)
Major Power, State A	0.287* (0.152)	0.654*** (0.141)
Joint Democracy	-0.402*** (0.099)	-0.408*** (0.059)
Additional Controls	...	...
Constant	-2.008*** (0.076)	-1.324*** (0.074)
Cruise Missiles, State A DV		
MTCR	0.528*** (0.009)	0.528*** (0.009)
Development, State A	0.367*** (0.004)	0.367*** (0.004)

Major Power, State A	-0.024 (0.036)	-0.024 (0.036)
Nuc. Weapons, State A	1.436*** (0.022)	1.436*** (0.021)
Constant	-0.923*** (0.008)	-0.923*** (0.008)
Cruise Missiles, State B DV		
MTCR	0.528*** (0.009)	0.528*** (0.009)
Development, State B	0.367*** (0.004)	0.367*** (0.004)
Major Power, State B	-0.024 (0.036)	-0.024 (0.036)
Nuc. Weapons, State B	1.436*** (0.021)	1.436*** (0.021)
Constant	-0.924*** (0.008)	-0.924*** (0.008)
Rho 21	0.001 (0.003)	0.002 (0.003)
Rho 31	0.003 (0.003)	0.005 (0.003)
Rho 32	0.058*** (0.01)	0.059*** (0.01)
Log Likelihood	-1001798.2	-1011935.3
Chi-Square (22)	28069.72***	28566.82***
Observations	1,094,164	1,094,164

Note: Robust standard errors in parentheses. In addition to the control variables reported in the table, each model includes temporal controls for the years since the last conflict initiation and cubic splines of that variable.

Significance: *** $p < 0.001$, ** $p < 0.05$ using a two-tailed test.

Table 3.9 displays the results of the three-equation multivariate probit model.

Again, I replicated the conflict models using the alternate dependent variables of ICB challenges (Model 15) and MID initiations (Model 16). Consistent with previous results, there was little difference between the multi-variate probit models and previously modeled probit, logit, and fixed effects models. Whether testing for the ICB challenge or MID initiation dependent variable, the result of the three-equation probit indicate that

even when endogenizing the acquisition of cruise missiles by both the initiator and defender, the direction and significance of the independent variable coefficients remain the same, with only a slight drop in coefficient strength.

Unlike Mettler and Reiter's (2013) surprising conclusion that there is no correlation between MTCR membership and ballistic missile acquisition, membership in the MTCR appears to be positively correlated with cruise missile acquisition. This result also runs counter to Barkley's (2008) assertion that MTCR membership is negatively and significantly correlated with ballistic missile acquisition.²⁵ The MTCR is designed to curb the proliferation of weapons capable of delivering weapons of mass destruction. Therefore, it follows for both ballistic missile and cruise missile proliferation to be negatively associated with regime membership. There appears to be different mechanisms at work in cruise missile proliferation as compared to ballistic missile proliferation.

The positive correlation between cruise missile acquisition and the MTCR variable suggests membership in the regime makes it easier for member states to acquire these weapons. Unlike their physically larger and outranged cousins – ballistic missiles – cruise missiles do not hold as prominent a place in the MTCR (Government of Canada 2017). They are included in the technology transfer annexes of the regime, however, because sophisticated technology associated with cruise missile design and fielding constitute a barrier to acquisition for technologically weaker states. As such, these states generally must rely on more technologically adept states to pass on their cruise missile

²⁵ Barkley (2008) proposes the negative and significant correlation between MTCR membership and ballistic missile acquisition suggests the international norms influenced by the MTCR negatively impact the incidence of ballistic missile proliferation.

technology (Mistry 2002). Paradoxically, these results suggest that membership in the regime signals the likely strengthening of export controls on the part of the receiving states, reducing the perceived risk that the state will, in turn, pass on newly purchased controlled technology to other, possibly rogue, states (Joshi 2016).

One example of MTCR membership encouraging proliferation in practice is India's 2016 induction into the MTCR (Joshi 2016). Membership appears to have already boosted India's efforts to acquire armed Predator drones from the United States.²⁶ Their involvement appeared to have paved the way for India to export its own BrahMos cruise missile to friendly states, provided the missiles' capabilities fall below the 300 kilometer/500 kilogram range to payload threshold required by MTCR Category I requirements (Government of Canada 2017; Joshi 2016; Mitra 2018). Regardless of the complexities, membership in the regime is voluntary and non-binding, though the possibility that there is a significant and positive relationship between membership and proliferation should give arms control policy makers a moment of pause.

Regime Type, Cruise Missiles, and the Use of Force

Having established empirical support for the hypothesis that states armed with cruise missiles are more likely to threaten, display, and use military force to coerce their adversaries than those states without cruise missiles, the question of regime type becomes a consideration. As noted, previous research tends to tie the likelihood of using military force to popular support, vis-à-vis electoral accountability, in democracies and domestic

²⁶ Though multiple states have obtained Predator drones from the U.S., these are typically the unarmed surveillance versions. Only MTCR states, such as Italy, have been able to purchase the armed versions of the remotely piloted aircraft (Joshi 2016).

support, vis-à-vis the selectorate, and proximity to rivals in autocracies.²⁷ Given the plethora of endogenous pressures, is there any difference between how cruise missiles affect the behavior of autocracies and democracies? Hypothesis 3 posits there is no difference between the probabilities that democratic or autocratic states with cruise missiles will use military power to achieve foreign policy objectives.

To examine the interaction between regime type, cruise missiles, and the use of force, I employ a logistic regression to compare the interaction effects between autocracies and democracies who are with and without cruise missiles. Interactive models help researchers examine the difference in the effect on a dependent variable when independent variables are used in combination. This method is helpful when the researcher's objective is to understand the effect of one independent variable on the dependent variable when the size of the independent variable's effect may be dependent on the magnitude of another, discrete, independent variable (Norton, Want, and Ai 2004). For example, Francis and Payne (1977) used this method in their examination of British voting behavior, noting differences between combinations of various independent variable coding consisting of demographic factors (i.e. age, gender, wealth) influenced their dichotomous dependent variable of whether or not an individual voted for the Labour or Conservative parties in British elections. Having examined interaction effects, I further test the results of my model using marginal statistics to compare the difference,

²⁷ For more on the nuances of regime type and the use of force, see Babst (1964), Bueno de Mesquita et al. (1999), Bueno de Mesquita and Siverson (1995), Doyle (Doyle 1983b, 1983a, 1986, 2005), Gartner (1998, 2008b, 2008a), Gartner and Segura (1998, 2000), Gartner, Segura, and Wilkening (1997), Larson (1996), Mueller (1973, 1993, 1994, 2005), Russett et al. (1995), Belkin and Schofer (2003), Debs and Goemans (2010), Kim (2017), and Weeks (2012, 2014).

if any, between the probabilities an autocratic state with cruise missiles or a democratic state with cruise missiles will initiate an ICB challenge militarized interstate dispute.

Table 3. 10 Regime Type and Cruise Missile Possession

	Model 17 ICB Logit of Interactions	Model 18 MID Logit of Interactions
Autocracy with cruise missiles	-0.079 (0.258)	-0.185 (0.155)
Democracy without cruise missiles	-1.019** (0.409)	-1.257*** (0.174)
Autocracy without cruise missiles	-0.188 (0.305)	-1.141*** (0.157)
Additional Controls	...	...
Constant	-1.718*** (0.368)	-0.973*** (0.241)
Chi-Square (15)	51.25***	2070.87***
Observations	2,390	1,101,110

Note: Results are based on the reference category, democracy with cruise missiles. Robust standard errors in parentheses. In addition to the control variables reported in the table, each model includes temporal controls for the years since the last conflict initiation and cubic splines of that variable, ballistic missile possession, nuclear weapon possession, distance between states, geographic contiguity, power parity, major power status of State A, and joint democracy.

Significance: *** $p < 0.001$, ** $p < 0.05$ using a two-tailed test.

I present the results of this analysis in Table 3.10. As hypothesized, there was no significant difference in the probability a democratic state armed with cruise missiles or an autocratic state armed with cruise missiles will use military power to achieve their foreign policy objectives. I replicate each interactive result with both the ICB challenge (Model 17) and MID initiation (Model 18) dependent variables. Using the democratic state possessing cruise missiles as the baseline independent variable against which the listed pairs of independent variables are compared, Table 3.10 shows that although the coefficients for each dependent variable are negative, they are not statistically significant.

This indicates the effect is likely random, therefore we must retain the null hypothesis. Hence, the likelihood an autocratic regime with cruise missiles will use force in an ICB or MID situation is not significantly different from the likelihood a democratic government with cruise missiles will do the same.

When considering an ICB challenge, there is no significant difference between an autocracy without cruise missiles and a democracy with cruise missiles, although there does appear to be a significant difference between democracies without cruise missiles and democracies with cruise missiles, supporting my earlier findings that missile possession affects state behavior. Because democracies and autocracies without cruise missiles are significantly different from democracies and autocracies with cruise missiles, using the MID initiation dependent variable it is safe to infer cruise missiles play a greater interactive role with regime type in a situation in which the outcome is polarized toward military outcomes, as in the MID data set, rather than general crisis outcomes which may or may not include military action, as in the ICB data set. Similar incongruent results were observed elsewhere in this research regarding the standard control variables used between the ICB and MID dependent variables. Finally, marginal effect analysis confirmed these observations. There is little difference between the probability an autocratic state or a democratic state with cruise missile will initiate either an ICB challenge (9.93% and 10.04%, $p < .001$, respectively) or militarized interstate dispute (.49% and .32%, $p < .001$, respectively).

In practice, we have observed this null hypothesis in action. For example, between 2014 and 2018, the United States and Russia became involved with the Syrian Civil war. Each side in the conflict, American, Syrian, and Russian, possesses its own

cruise missile capabilities. However, upon militarily entering the conflict, the United States and Russian sides have shown little reluctance to use cruise missiles to coerce their adversaries. Russian cruise missile use has been a regular, though not exclusive, feature of their conventional attack strategy against alleged terrorist and anti-Syrian government forces. The reason may be two-fold. First, the Russians could be eager to demonstrate the effectiveness of their relatively new Kalibr sea-launched land attack cruise missile. Second, consistent usage of the Kalibr cruise missile in combat has provided the Russian military with needed reliability metrics to make future improvements in the design and use of the missile. In the first few days of use, many Kalibr missiles launched from Russian ships in the Caspian Sea allegedly landed short in Iran, a blow to the missile's credibility.

American employment of cruise missiles in the Syrian conflict is more complicated. Under the Obama administration, the United States, weary of further military entanglements in the Middle East, was reluctant to commit significant military forces to the region to support Syrian rebels. However, following a chemical attack by the Assad regime on its own people in early 2017, the new American President, Donald Trump, ordered a limited scale cruise missile attack on a Syrian airbase (Conway 2017). When chemical attacks resumed, the United States, with the assistance of Great Britain and France, launched a larger attack the following year. Though United States military involvement has not been as extensive as Russian involvement, each country has been willing to commit military force to achieve their objectives in the region. Cruise missiles played a prominent role in each state's military strategy.

Conclusion

This research uses an explanatory sequential mixed method design to explore the possibility that states which acquire cruise missiles are more likely to use force to achieve their foreign policy objectives. Over the course of three distinct phases of inquiry, the mixed method design includes quantitative data analysis, qualitative explanatory case studies, and integration. This chapter constituted the empirical investigation of the quantitative phase of research by presenting the results of large-N analyses of original data collected on cruise missile possession combined with commonly-used conflict data sets. Subsequent chapters build and expand on the results of the quantitative analysis through two nested case studies. These case studies illustrate the mechanisms behind phenomena found in the quantitative phase of research. They also help explain why cruise missiles represent a qualitatively different capability than most other military assets, effectively influencing how states approach foreign policy problems.

The most important outcome in this analysis is the degree to which cruise missile possession appears to affect a state's use of force. Descriptive statistics and regression analysis supported the hypothesis that states armed with cruise missiles are more likely to use military force to achieve their foreign policy objectives. Using both ICB and MID measurements of crisis and dispute initiation, correlation between possession is not only statistically significant, but substantively important as well. These results held under closer scrutiny when controlling for endogeneity in a multivariate probit analysis of cruise missile acquisition and conflict.

To explore whether the effect pertains to cruise missiles, in general, or is driven more by the often-used land attack cruise missiles, I performed separate analyses of land

attack cruise missile possession. The results were surprising. Although only eleven states possessed land attack cruise missiles during the period in question (1946-2007), there was a significant, though weaker, correlation between land attack cruise missile possession and crisis initiation.

Having established a connection between cruise missile possession and the initiation of military force, I next turned to the effect of cruise missile possession on degrees of conflict short of force. As George (1991), George, Hall, and Simmons (1971), Schelling (1956, 1960, 1967, 2008), Slantchev (2005, 2006b, 2009, 2011), and Snyder and Diesing (1977) advised, though coercion may involve brute force as a last resort, often military options will be limited to those actions which increase the credibility of threats such as displays of force. In this chapter, I found empirical evidence to support the hypothesis that states armed with cruise missiles are more likely to use threats and displays of force to coerce adversaries. Cruise missile states are approximately 2.5 times more likely to use threats and displays of force than non-cruise-missile states.

North Korea's behavior in the Yellow Sea, and China's South China Sea incursions illustrate the ways cruise missiles are deployed to display force. North Korea continues to back up threats of retaliation for perceived encroachments with the deployment of dated – though effective – anti-ship cruise missiles. China has reinforced its South China Sea policy with the deployment of sophisticated anti-ship cruise missiles on artificial islands. These installations fill potential gaps left in their ballistic missile systems by advancements in western anti-ballistic missile defenses and send a clear signal that interference with China's regional strategy may be costly (Bodeen 2018;

Goldstein 2015; Gormley, Erickson, and Yuan 2014; Michishita 2009; Panda 2017; Reuters 2018a).

Finally, I examined the empirical evidence to determine if the interaction between regime type and cruise missile possession affects state behavior. As hypothesized, I found no evidence to suggest cruise missiles change the probability that either a democratic or autocratic state will initiate armed force differently. Instead, after accounting for regime type, missile possession, and state behavior, the interactive effects were negligible – less than one percent – whether I measured for ICB challenges or MID initiations. There were no significant differences in the coefficients between democracies with cruise missiles and autocracies with cruise missiles. The data indicates that cruise missile possession affects disparate types of governments relatively equally.

Some weapons provide such a powerful military capability that it is important to understand how their possession affects the relationship between states. The goal of this research is to investigate how cruise missiles affect the likelihood a state will use force to coerce its adversaries. Empirical evidence in this chapter demonstrated the connection between state possession of cruise missiles and conflict initiation. There is a significant statistical correlation between having cruise missile capability and initiating conflict. The proliferation of these weapons should alarm national leaders seeking to abate international conflict. As large-scale warfare between major powers declines, the capabilities provided by cruise missiles may entice peripheral states who continue to be embroiled in small-scale conflict.

In Chapter Four, I begin the qualitative phase of this research by examining the case of the Falklands Conflict. Argentina entered the 1980s with a flagging military junta

in that some believe sought to mitigate domestic problems by capturing the long-contested Falkland Islands from Great Britain (Arquilla and Rasmussen 2001; DeRouen 2000; Levy and Vakili 1992; R. A. Miller 1995, 1999; R. A. Miller and Elgün 2011; Mitchell and Prins 2004; Oakes 2006; Tarar 2006). I posit the acquisition of air-launched Exocet anti-ship cruise missiles offered the denial element needed to dissuade the British from retaking the islands. The bold move by Argentina failed. Though the cruise missiles worked as intended, inflicting heavy damage on the British fleet and forcing changes to naval strategy, they were not enough to prevent the British from recapturing the islands.

CHAPTER FOUR: THE FALKLANDS CONFLICT, 1982

This case study illustrates the conclusions highlighted in the quantitative strand of the analysis in Chapter Three through an examination of the role cruise missiles played in the Falklands Conflict of 1982. The Falklands Conflict erupted when a recently-installed military junta in Argentina used armed force to reclaim the Falkland Islands from the United Kingdom. The Falkland (or Malvinas) Island archipelago is a small cluster of windswept islands roughly 300 miles east of Argentina.²⁸ Since the 1700s, the United Kingdom has claimed the islands as a sovereign British territory, much to the consternation of the Argentine government, who claims historical dominion over the islands. The islands' contested status remained relatively stable until the Argentine military invaded in 1982 to reclaim them for Argentina. This case study illustrates how Argentine cruise missile possession increased the probability that Argentina would abandon diplomacy in favor of a military solution to coerce the United Kingdom into abandoning this south Atlantic territory.

I assert that cruise missile availability influenced Argentina's leaders to initiate a conflict in the belief that their missile arsenal would deter a British military response. I begin with a brief discussion of my case study selection strategy. Then, I present the history of the dispute over the Falkland Islands, demonstrating that given the long history

²⁸ Aside from the dispute over dominion, the name of the island chain is also in dispute even after the termination of the conflict under study. The United Kingdom, under which the islands currently fall, calls the 6,000 square mile archipelago the Falkland Islands. Argentina, who also claims possession in right, if not in fact, calls the islands the *Islas Malvinas*. For simplicity and continuity, this case study refers to the islands alternately as the Falkland Islands, or simply, the Falklands, and the overall conflict as the Falklands Conflict.

of conflicting claims, it was unlikely Argentina would resort to force to annex the islands. Next, I explain Argentina's decision to go to war and the role cruise missiles played in that decision. Finally, I discuss how the possession of new cruise missile capabilities contributed to Argentina's decision to initiate the conflict. This case study illustrates that, all things being equal, Argentine cruise missile possession increased the likelihood that Argentina would use force to occupy the islands.

Case Selection

Case study analysis allows the researcher to complement large-N statistical analysis by examining the circumstances behind phenomena in question through in-depth study. Merriam (2009) defines a case study as, "an in-depth description and analysis of a bounded system." (40) Both case studies in this mixed method research project provided a description and analysis of the unique role played by cruise missiles. The quantitative analysis in Chapter Three provided the empirical evidence for the general effect of cruise missiles on militarized conflict initiation, therefore I do not seek to uncover causality with this case study (Crasnow 2012). The cases presented here and in Chapter Five illustrate how the qualitatively unique capabilities provided by cruise missiles increase the likelihood a state will resort to the use of force in pursuit of foreign policy objectives.

Both cases in this research represent an instance in which the model used in the quantitative phase produced a high predicted probability of militarized conflict initiation that proved consistent with the historical record.²⁹ The quantitative phase both identified

²⁹ In Stata 15.1, this was accomplished using the *predict* command to create predictions for the sample on which the models from Chapter Three were fit using logistic regression.

cases that best fit the theoretical model (on-the-line cases) and tested the proposed hypotheses from Chapter Two for empirical support (A. Bennett and Elman 2007; George and Bennett 2005). The purpose of the mixed method strategy used here is to improve conceptualization and increase confidence in the study's overall findings by illustrating the quantitative phase's conclusions (Creswell and Plano Clark 2011; Lieberman 2005; Munck and Snyder 2007).

The Falklands Conflict explains the cruise missile's effect on state behavior in two ways. First, cruise missiles increased the odds that Argentina would initiate armed conflict by providing a formidable anti-access/area-denial (A2/AD) capability.³⁰ The Argentine government mistakenly assumed the United Kingdom had lost interest in the region. They believed their newly acquired A2/AD capability vis-à-vis air-launched Exocet cruise missiles would effectively deter the United Kingdom from attempting to recapture the islands by force. Instead, the British, not fully aware of the operational status of Argentine cruise missiles and more intent on keeping the island territory than their strategic messaging indicated, mounted a strong military response. Second, although Argentine cruise missiles did not effectively deter a British military response, their successful use against the British Navy had profound implications for British military strategy. The missiles essentially forced the British Navy to keep their ships

³⁰ This concept, Anti-Access/Area Denial or A2/AD, posits that adversarial forces can be successfully coerced to abandon a strategy by denying effective use and/or transit of an area. This denial of access can span across military, economic, and political domains. In military terms, this can mean denial of basing, transit, or overflight using long-rang weapon systems like cruise missiles, ballistic missiles, submarines, and space assets (Freier 2012).

beyond the range of Argentine aircraft, imposing significant logistical and operational challenges for the islands' recapture.

The Falklands Conflict case exposes how cruise missile possession can increase the chances of conflict by altering the initiating state's probability of success. Each situation's strategic context must be taken into consideration along with other relevant factors in assessing conflict potential such as leadership assumptions and political ideologies (Bueno de Mesquita 1980). States must consider many factors when deciding to initiate a conflict including systemic, dyadic, and unit level variables (Huth, Bennett, and Gelpi 1992). System variables, such as the number of states involved in the situation and the concentration of military capability, produce uncertainty. Dyadic variables, such as rival's past behavior and military capabilities, affect the expected payoff of a military confrontation. Finally, unit level variables such as domestic political considerations affect risk propensity. Misperceptions, uncertainty, and resolve may set the conditions for changes in state behavior to the point that biased decisions are made based on preconceived notions about the adversary's motives (Jervis 1968, 1976; Morrow 1989).

Conflict, otherwise in neither state's best interest, may come as the end product of a state's pursuit of objectives through coercion when decisions are grounded in misperceptions about the adversary (Fearon 1995; Jervis 1968). In the case of Argentina, misperceptions of British resolve met with British uncertainty over Argentine capabilities. The resulting crisis produced the conditions Argentina needed to rationalize an invasion. The Argentinians expected the payoff from forcibly taking the islands would outweigh the risk of provoking a great power. The A2/AD capabilities provided by Argentina's newly acquired Exocet air-launched cruise missiles contributed to this

rationale. The Falklands Conflict illustrates how qualitatively different weapons can influence decisions to initiate conflict by offering the initiating state a denial capability sufficient enough that opponents might be dissuaded from, or unable to, respond with force (Belkin et al. 2002; K. Mueller 1998; Pape 1996).

The Falkland Crisis offers a unique opportunity to examine the specific nature of the relationship between cruise missiles and conflict initiation. The case is an example of a limited conflict in which a peripheral power, Argentina, attacked a great power, the United Kingdom. The objectives sought were limited, as were the weapons employed. The use of limited weapons provided the ideal backdrop to examine how cruise missiles might be considered in the context of coercion (Freedman 1982; R. E. Osgood 1957). The case study demonstrates that cruise missiles played a significant role in increasing the probability Argentina would use force to capture the Falkland Islands while also increasing the likelihood the United Kingdom would be forced to incur great losses to reclaim them. Furthermore, the Falklands case contributes to the overall large-N analysis by helping to clarify the directionality of the relationship between cruise missiles and conflict initiation (Maniruzzaman 1992).

The statistical tests used in Chapter Three to estimate the causal direction of the relationship between the independent variable, cruise missile possession, and the dependent variable, militarized interstate dispute and crisis initiation, used lagged variables and multivariate probit analysis to control for the temporal order of acquisition and conflict. The Falkland Conflict case highlights the importance of timing in estimating the effects of cruise missiles on conflict initiation. The time between obtaining a relevant cruise missile capability and the decision to initiate conflict occurred

sequentially, over a relatively brief timeframe. By providing an occasion to investigate the history of the dispute, we can explore the context surrounding the purchase and use of these weapons and their ancillary support systems (e.g. aircraft, technical assistance) in the late 1970s, and the surprising initiation of a militarized crisis in 1982.

The case study begins by briefly presenting the historical context of the conflict from the archipelago's European discovery and colonization in the 15th Century to the conflict between Argentina and the United Kingdom in 1982. Context in this case is key. Though possession of the islands was a clear point of contention between Argentina and the United Kingdom for more than 150 years, there was little indication that the South American country would attempt to take the islands by force until a confluence of events in the early 1980s created the conditions for invasion. While the case study presented here does not provide a blow by blow account of the various battles that occurred between April and June of 1982, it does focus on the role cruise missiles played in both the lead-up to hostilities and the conflict. The case study concludes by illustrating how the possession of these cruise missiles increased the probability that Argentina would change 150 years of non-violent strategy to attempt to take the islands by force.

The Falkland Islands

The Falklands are an austere cluster of islands in the South Atlantic, 300 miles from the coast of Argentina, and near the Antarctic Circle. Although claimed by the United Kingdom, they are more than 7,500 miles away. The archipelago in which they lie covers over 6,000 miles, but the main landmass consists of two large islands, East and West Falkland, divided by a narrow sound. The Falklands' proximity to the Antarctic

Circle makes for a bleak climate, with an annual average temperature of 43 degrees Fahrenheit. There are few trees on the rocky, windswept islands. Most trees grow in the public park at the center of Stanley, the capital and population center (Hoffmann and Hoffmann 1984).

The demographic and economic makeup of the islands is markedly British. The British government named the islands in the honor of Viscount Falkland, the Royal Navy treasurer, in 1690. At the time of the Argentine invasion in April 1982, the islands were home to 1,849 people (Dillon 1989). All but five percent of the population were descendants of British colonists; the remainder were Argentinian, Chilean, and North American (Freedman 2005a; Hoffmann and Hoffmann 1984). Sheep farming drives the local economy, though in the 1970s the prospect of nearby oil was beginning to drive exploration off the coasts. However, by the early 1980s, the one billion barrels of oil in the region had yet to be discovered (Central Intelligence Agency n.d.; Critchlow 2015). Prior to 1982, the most significant military action in the Falkland Islands was a remote battle between the British and German navies in 1914 (Freedman 2005a). To understand the calculus behind the Argentina invasion of the Falkland Islands in 1982, it is important to understand the contested history of the islands' possession.

Falkland Island History 1502-1976

The central political problem in the Falkland Islands now as it was in 1982 is the 250-year-old dispute over the islands' ownership (Freedman 2005a). Though several countries throughout history have claimed the islands for their own, for the last 150 years the international community has recognized the islands as British territory. During this

time, however, Argentina, and its political ancestors, have disputed this claim.

Regardless, despite the long and contentious history, there had been few serious attempts by Argentina to reclaim the islands. Both the British and Argentine claims of ownership are based on a complex history of discovery, settlement, and treaty as outlined in Table 4.1.

The British claim Captain John Davies, aboard the HMS Desire in 1592, was the first to discover the islands. Conversely, Argentina claims Italian explorer Amerigo Vespucci (and others) first sighted the islands in 1502. But none of these discoveries involved going ashore. The first landing attempts would not come until 1690 when British Naval Captain John Strong disembarked on the islands. In 1748, having recognized the islands' strategic significance as a base to interdict Spanish naval communications, the British attempted to establish a more permanent settlement. Spain objected, citing treaties that appeared to grant them sovereignty over the region.³¹ Although the British refuted the claims, they canceled the expedition to settle the islands.

Later, following the Seven Years' War (1756-1763), France tried to use East Falkland to rebuild their colonial power by establishing a settlement. Again, Spain contested French claims to the islands, and like the British before them, France abandoned the islands in the face of protest. Spain then incorporated the would-be French settlement on East Falkland under the authority of the Captaincy General of Buenos Aires. Immediately prior to the settlement between France and Spain, the British again arrived in West Falkland claiming the island for the King George III, ignorant of

³¹ The 1494 Treaty of Tordesillas, the Anglo-Spanish Treaty of 1604, the Treaties of Madrid of 1670, and the Treaty of Utrecht of 1713 reinforced Spanish claims to the region.

both the deal between France and Spain and their adjacent settlements (Freedman 2005a). This time, however, Spain allowed the British to remain, although they failed to resolve the issue of sovereignty. In 1774, political pressure and increasing expenses due to the rebellious North American colonies forced the United Kingdom to abandon their settlement plans once again; instead they left behind a lead plaque to announce their claim to the islands.

In the 1780s, Spain encroached on the abandoned British settlement and used it as a prison camp. The Spanish removed the plaque left behind by the British and established a foothold on the island to prevent British return. Spain then tried to block future settlement of the islands through the 1790 Saint Lawrence Convention, which conceded navigation and fishing rights to the British in the Pacific Ocean, but prohibited settlement in the South Atlantic. In 1806, the British mounted two failed military expeditions to capture Buenos Aires, and to retrieve their previously removed plaque. This forced the Spanish Governor to flee the Falklands (Freedman 2005a; Hoffmann and Hoffmann 1984). In 1811, the Spanish abandoned the island altogether with the ascendency of the Government of Buenos Aires for the United Provinces, the precursor of the modern state of Argentina.

The Government of Buenos Aires claimed the islands as an inheritance from the Spanish and sent an expedition to establish a settlement in 1820 (Freedman 1982). This new settlement, largely a private venture, was a commercial success prompting the Government of Buenos Aires to issue a decree in 1829 declaring dominion over all the former Spanish territories in the area. Along with this decree, the government established a formal presence on East Falkland and the first formal military outpost. The British,

however, having never abandoned their claim to the islands, expelled the Argentinians³² by force in 1833, taking advantage of a falling out in relations between Argentina and the United States. The United Kingdom established and maintained control of the islands from this point forward.

Argentina never abandoned its claims to the islands after 1833, but took no active measures to reclaim them by force for the next 150 years. This reluctance to aggressively assert their claim can be attributed, in part, to the close economic relationship between the two states, resulting in British regional economic dominance by the late 1800s (Hoffmann and Hoffmann 1984). In fact, between 1849 and 1884, Argentina lodged no formal protest against the United Kingdom for control of the islands at all, leading the British to believe they had abandoned their claims (Bluth 1987). It was not until the early 20th Century that Argentina, suspecting they were quietly becoming a British economic dependency, began to mount a stronger diplomatic campaign to establish their claim to the islands. Even these protests were mild compared to an increase in interest in the islands' disposition after World War II (Hoffmann and Hoffmann 1984).

In 1947, the Argentine government mounted a campaign to reduce British influence in its economy. A new government, led by President Juan Perón, sought to nationalize the economy, beginning with seizing the national railway system from the British government. President Perón also sent delegates to an inter-American conference in Rió de Janeiro to suggest the establishment of a hemispheric defense zone to prevent outside attack in the region. This treaty zone included the Falkland Islands. For the next

³² During this time, Buenos Aires suffered a series of governmental turnovers culminating in a civil war which ended in the establishment of the Argentine Confederation in 1831 (Lewis 2003).

decade, Argentina continued to lobby patiently for Falkland repatriation (D. Anderson 2002).

Table 4. 1 Falkland Islands Dispute Timeline, 1494-1982

Date	Event
1494	Treaty of Tordesillas divides the Americas between Spain and Portugal
1502	Argentina claims Amerigo Vespucci discovers the Falkland Islands
1592	British claim Captain John Davies discovers the Falkland Islands
1690	First recorded person, British Captain John Strong, lands on the island
1748	British send an expedition to establish a settlement
1764	French arrive on West Falkland and claim it for France
1765	British establish a settlement on East Falkland
1766	France and Spain broker a deal removing the French from the islands
1774	British abandon their East Falkland settlement
1780	Spain uses the former British settlement as a prison camp
1790	St. Lawrence Convention prohibits British settlement in the South Atlantic
1806	British launch two failed military expeditions to capture Buenos Aires
1811	Spanish abandon islands, replaced by the Government of Buenos Aires
1820	Government of Buenos Aires establishes the first commercial settlement
1829	Government of Buenos Aires inherits Spanish claims in the South Atlantic
1831	Government of Buenos Aires replaced by the Argentine Confederation
1833	British expel Argentinian troops from the Falklands, reestablish settlement
1947	Argentina attempts to reduce British influence on its economy
1965	United Nations Resolution 2065 calling for Argentine/British negotiations
1975	British send Lord Shackleton on an economic survey mission of the islands
1976	Military junta takes power in Argentina
1976	Argentina imports Exocet anti-ship cruise missiles from France
1982	Argentina invades the Falkland Islands to retake possession
1982	Exocets sink HMS Sheffield, SS Atlantic Conveyor: damage HMS Glamorgan

Note: Information for this timeline derived from Anderson (2002), Bluth (1987), Freedman (2005a, 2005b), and Hoffman and Hoffman (1984).

In the 1960s, the United Nations took note of Argentina's protests against British colonialism in the Western Hemisphere. In November, 1965, the United Nations passed Resolution 2065, calling for the governments of Argentina and the United Kingdom to

begin serious negotiations over the disposition of the islands (United Nations General Assembly 1965). The resolution called for “the Governments of Argentina and [the United Kingdom] to proceed without delay with the negotiations recommended by Special Committee on the Situation ... with a view toward finding a peaceful solution to the problem, bearing in mind the ... interests of the population of the Falkland Islands (Malvinas).” (United Nations General Assembly 1965, 57) The United Kingdom began a slow campaign to discourage British investment in the islands, with an eventual goal of transferring sovereignty back to Argentina through negotiations. A small but powerful political lobby in the British Parliament hindered diplomatic progress on the grounds that the United Kingdom should not abandon British subjects living on the island to Argentina. By the 1970s, although the islands had become a drain on the British economy, the islanders wished to remain under British control, particularly given the social and political instability that characterized Argentina at the time. Seeing little progress in the negotiations over Falkland sovereignty, Argentina grew impatient (D. Anderson 2002).

It is important to note at this point that since 1833 Argentina developed a consistent pattern of steady, yet peaceful, negotiation with the United Kingdom over the Falkland Island question. At no time during the 150-year period between the final British occupation of the islands in 1833 and the Argentine invasion of 1982 did the use of force to recapture the islands appear significantly in Argentine political discourse. Rather, island repatriation was a point of national pride for nostalgic and anti-colonialist reasons. Despite a chilling in relations following World War II, the history of close economic ties

created with United Kingdom since the early 1800s formed an incentive for Argentina to press for a firm, but peaceful solution to the Falklands issue.

In the mid-1970s, Canada and the United States requested permission from the United Kingdom to explore for oil along the continental shelf in the waters surrounding the Falklands. The possibility of oil in the Falkland Islands re-invigorated Argentine attempts to negotiate with the British over the islands' sovereignty. The British seized the opportunity to exploit oil resources off the islands' coast in the hopes of mitigating the declining economic situation on the islands (Franks 1983); the prospect of sustainability provided an incentive for the British to further delay negotiations with the Argentine government (Hoffmann and Hoffmann 1984).

To get a better understanding of the economic situation in the Falklands, Britain sent a survey team headed by Lord Shackleton³³ to the islands in 1975. The team's report, *An Economic Survey of the Falkland Islands* (1976) painted a grim picture of the islands' economic and social situation. Shackleton's report constituted an indictment of British colonial structure. Exploitation of a single crop, sheep's wool, resulted in a quasi-feudal community rife with economic divestment and depopulation (Dillon 1989). The report exposed a problem with the Falkland's economy that the British Parliament had already begun to understand. The Falkland Islands were a drain on the economy and a peripheral political interest. The report highlighted to the British that the islands were almost solely dependent on Argentina for their communications and completely dependent on Argentina for their air transportation (Tugendhat 1976). The authors asserted that the islands could be made economically viable without pushing the political

³³ Lord Shackleton was the son of Sir Earnest Shackleton of Antarctic exploration fame.

fate of the islanders closer to Argentina (Freedman 2005a). The survey recommended steps be taken to assure economic growth in the islands. Specific recommendations included exploring for oil, building a permanent air strip that could accommodate longer-ranged flights to countries other than Argentina, and to assist in improving lines of logistics and communication for the islanders (Calvert 1982).

The British survey, and its subsequent report, increased Argentine suspicions that the British were not taking negotiations seriously. The Argentine government refused to allow members of the survey team to transit Argentina in-route to the islands. This stubbornness forced the survey team to arrive aboard the HMS Endurance, the only semi-permanent British naval presence in the region. In February, 1976, the government in Buenos Aires escalated their coercive strategy toward the Falkland question by threatening forcible seizure of the RRS Shackleton, a ship connected to the expedition, if it came within 200 miles of the Argentine coast. The 200-mile limit included waters surrounding the Falkland Islands. On February 4th, an Argentine destroyer intercepted and fired warning shots at the RRS Shackleton in what would be the first significant military confrontation between the two countries in nearly 150 years. Unbeknownst to Argentina, the incident drove the British to review their regional military policy, which up until this time had signaled a significant withdrawal from the South Atlantic. As a result, the British decided to keep the HMS Endurance, the only armed warship in the region, near the Falklands for a year longer than planned (Dillon 1989; Freedman 2005a).

The political environment in Argentina changed in 1976 following a coup in which a military junta replaced the democratically elected government. Exasperated from years of social unrest, guerrilla warfare, and hyperinflation, the Argentine people

accepted the military's ninth intervention in Argentine politics since 1900 (Gomez 2001). The military junta, led by the Argentine Army's commander, General Jorge Videla, seized control of Argentina and began a "Dirty War" in which Argentinians suffered severe political oppression, mass disappearances, and steep economic decline. With the coup came a new direction for Argentina, resulting in severe social, economic, and military consequences (Makin 1983).

Huntington (1968) called Argentina a "praetorian society" for its high capacity for corruption and violence to superficially correct social malaise. In 1976-1983 Argentina embodied this praetorianism by putting an end to what the military junta perceived to be political and social chaos through torture, kidnappings, and extrajudicial executions. During this time, it was not uncommon for decapitated, anonymous, bodies to wash up on the beaches of Buenos Aires, having been tossed from naval vessels offshore (Schmidli 2011). Much of the turmoil stemmed from the new military government's primary weaknesses: inter-service rivalries and divided internal politics (Calvert 1982). By 1982, however, the government was on the verge of insolvency due to burgeoning domestic and foreign debt. The substantial debt not only limited Argentina's ability to enact needed economic reforms, but also restricted the funding of widespread domestic oppression the junta believed was needed to suppress the population (Oakes 2006).

The Decision to Escalate the Dispute

By the early 1980s, the United Kingdom had no clear strategy for the South Atlantic. On the one hand, it was sending strong signals that they were no longer interested in maintaining a presence in the South Atlantic. On the other hand, the United

Kingdom seemed intent on safeguarding the rights of the British citizens on the islands (Bratton and Thies 2011). The scheduled removal of the HMS Endurance would essentially eliminate any significant British military presence in the region (Dillon 1989). The ship was to be replaced by a small contingent of 70 Royal Marines on East Falkland in 1981 (Freedman 1982). The same year, the British cancelled a new military barracks project in Port Stanley (Bratton and Thies 2011). The removal of the HMS Endurance and the installation of the small Royal Marine contingent left no appreciable British military presence in the South Atlantic. Furthermore, as a member of the North Atlantic Treaty Organization (NATO) with a flagging domestic economy, the United Kingdom had largely divested itself of its force projection capabilities. Instead, NATO ally countries were increasingly relied upon to conduct expeditionary operations outside Europe. The British were steadily divesting themselves of the ability to significantly conduct military operations beyond Europe.

On 10 and 11 September, 1980, the British Minister of State, Nicholas Ridley, Argentine Deputy Foreign Minister, Comodoro Cavandoli, and Commandante Bloomer-Reeve,³⁴ held secret meetings in Geneva, Switzerland, to discuss the future disposition of the Falkland islands (Falklands: FCO record of Anglo-Argentine Ministerial talks on the Falklands [declassified 2010] 1980). At the meeting in which, “It was agreed ... that complete secrecy was essential to both sides,” (1) the British and Argentine representatives discussed the possibility of gradually transitioning Falkland sovereignty to Argentina. The meeting was considered so secret that Mr. Ridley’s presence in

³⁴ Commandante Bloomer-Reeve would become the post-invasion civil administrator in the Falkland Islands.

Switzerland was scheduled under the guise of a painting holiday and the Argentine representatives were officially believed to be in Rome (Briley 2005). At the meeting, the British emphasized the islanders' hostility to Argentine rule, fearing they would be forced change their way of life and face economic and social uncertainty. At the same time, the islanders were concerned over competing claims of sovereignty fearing, "armed clash could never be ruled out." (Falklands: FCO record of Anglo-Argentine Ministerial talks on the Falklands [declassified 2010] 1980, 1). Mr. Ridley proposed reducing islander anxiety through a 200-year leaseback arrangement to transfer ultimate control to Argentina. Over that time, the Argentine government would have the opportunity to engage with the islanders over economic and municipal affairs, bringing their relationship closer.

The Argentine representatives were receptive to the proposal of a leaseback arrangement, but objected to a 200-year lease period. They understood a shorter period (e.g. 20 years) would be too soon to ensure a successful and compete transition, and so offered 75 years as a compromise. The Argentine representatives also proposed the immediate removal of the Royal Marines garrisoned on the island as a demonstration of good faith. In the exploratory proposal handed to the Argentinians at the meeting's conclusion, the British suggested a 99-year leaseback which included flying the Argentine and British flags side by side on the island. Though the leaseback proposal would be met with hostility from both the British Parliament and the Argentine people (Briley 2005), the message to Argentina was clear in 1980. The British were willing, under the right circumstances, to give up the islands.

By 1981, the Argentine government became increasingly convinced that the United Kingdom was no longer taking the defense of the Falkland Islands seriously (Calvert 1982). The British reinforced this misconception with the planned removal of the HMS Endurance, the closure of an Antarctic survey base on South Georgia, and lessons learned from seventeen years of steady negotiations. With a weak Argentine economy and support for the junta flagging, the government examined the feasibility of occupying the islands by force. If the United Kingdom was already sending signals that they were uninterested in the islands, an occupation may coerce the British to finally give up the islands. The Argentine Foreign Minister, Dr. Nicanor Costa Mendez, believed the British would be “too civilized” (quoted in Calvert 1982, 59) to respond to such an incursion with force for such a peripheral interest. The Argentine government decided to test this hypothesis by probing the British response to a minor incursion (Arquilla and Rasmussen 2001).

On 19 March 1982, an Argentine naval transport, ARA Bahia Buen Suceso, landed 41 Argentine contractors on South Georgia island where they hoisted an Argentine flag (Bratton and Thies 2011). The group was ostensibly on a mission to recycle metal from a defunct whaling station. The plan, code named “Project Alpha” by the Argentine military, was a plot to use subterfuge to quietly intermingle Argentine troops with the civilian contractors, use naval vessels to regularly transport logistics, and quietly establish a permanent presence on the recently abandoned island (Freedman 2005a). The British government protested, calling the incursion unannounced and illegal. They demanded the Argentine workers leave the island. The Argentine navy dispatched two ships to lie offshore as protection while the metalworkers remained on the island

(Calvert 1982). The HMS Endurance, scheduled soon to be withdrawn from the area, was dispatched with Royal Marines to remove the workers (Hopple 1984). By the time the HMS Endurance arrived at South Georgia on 21 March, it appeared the Argentine vessels had departed with the shore party and the crisis was over (Freedman 2005a).³⁵

For the Argentine government, however, the British reaction to the South Georgia incident was troubling. They did not anticipate such outrage from the British. On 24 March, the Argentine military ordered two missile corvettes to position themselves between the Falkland Islands and South Georgia, but did not order them to intercept the HMS Endurance. The same day, the junta met to discuss the issue. They requested the military plans to take the islands by force be presented (Freedman 2005a).

The junta met several times prior to the incident to discuss a possible incursion. In January, they decided that if the current round of negotiations, taking place in New York, should fail, they should consider taking the islands by force during the winter of 1982. The plan, codenamed “Operation Rosario,” operated under two assumptions (Bratton and Thies 2011). The first assumption was that the Argentine military could take the islands by surprise in a bloodless attack, making the islands’ capture more palatable to the international community. The second assumption, given apparent British willingness to surrender the islands over the long term, was that the British would not use force to remove the Argentine occupation forces from the islands. However, with the unexpected British response to the South Georgia incident, the junta was concerned that they may have inadvertently provoked the British to reinforce their island defenses.

³⁵ In fact, some salvage workers remained on the island, unbeknownst to the British (Freedman 2005a).

Therefore, if action was to be taken, it would need to be taken soon and be backed by a A2/AD capability sufficient enough to deter or deny a British military response (Bratton and Thies 2011). Thus, the junta decided to launch Operation Rosario on 2 April, months ahead of the original timeline and, ironically, the best possible time for a British response (Hopple 1984).³⁶

The Exocet Factor

By the 1970s, Argentina, like some other peripheral states, began procuring cruise missiles as a way to augment gaps in their naval defenses (J. T. Bowen 1997). In the early years of the Cold War, cruise missiles presented a way to surmount the technological challenges posed by ballistic missile technology to deliver nuclear weapons. By 1960, however, many of those challenges had been overcome and cruise missiles were relegated to the role of naval defense weapon (Betts 1981). The Soviets, falling behind the United States in naval capability, needed a low-cost weapon that could put American capital ships at risk. This requirement led to a special emphasis on the development of anti-ship cruise missiles in the 1950s. Prior to the Falkland Conflict, the

³⁶ If Argentina adhered to its original extended timeline, the invasion may have gone uncontested. As it was, the British fleet was concentrated at home for the Easter holiday, making a Falkland contingency deployment logistically simple. Moreover, if Argentina had waited even longer, the British would have lacked critical aircraft carrier support. The Royal Navy's two aircraft carriers, HMS Hermes and HMS Invincible, were to be sold to Australia the following year, leaving the navy with limited power projection capabilities. Finally, a delay of only a few months would have seen arms purchases and Argentine readiness issues completed and addressed (Dabat and Lorenzano 1984). This disregard for seemingly basic strategic considerations provides strong evidence that the Argentine government did not believe the British would send a military response to end the incursion (Hopple 1984).

most notable cruise missile accomplishment was the 1967 sinking of the Israeli destroyer, INS Eilat, by a small Egyptian gunboat armed with Soviet P-15 Termit anti-ship cruise missiles, known in the West as the Styx missile. The INS Eilat incident demonstrated the power of cruise missiles to level asymmetric naval playing fields, signaling to the world that smaller, less advanced, or poorly funded navies can seriously threaten, and possibly defeat, more capable navies. The incident triggered a demand for anti-ship cruise missile technology, especially in militarily weaker, peripheral, states. The Exocet anti-ship cruise missile was a product of this demand. Its relatively low cost and ease of procurement made the Exocet one of the most popular anti-ship cruise missiles in the world (Associated Press 1987; Farenkopf 2016).

In 1976, Argentina began receiving its first shipment of Exocet cruise missiles from France (SIPRI 2015). The AM-39 Exocet, designed by Emile Stauff for the French company Aerospatiale, is an air-launched anti-ship cruise missile. It is a standoff weapon capable of launching from an aircraft to an ocean-going target up to 50 kilometers away. The Argentine military ordered ten air-launched Exocets and their corresponding delivery aircraft, the Super Etendard, from France in 1979 to complement their MM-38 sea-launched Exocets received in 1976 (Figure 4.1).³⁷ By 1982 five of the aircraft and missiles had been delivered (Eddy, Linklater, and Gillman 1982). The Exocet is a cruise missile of modest capability. Its range is unremarkable, and its payload, 165 kilograms of explosives, is not particularly large (Arnett 1991).

³⁷ The MM 38 sea-launched Exocet variant was only used once in the conflict, to little effect, when launched from a makeshift shore battery against the HMS Glamorgan on the last day of the conflict (Freedman 2005b).

Figure 4.1 The Super Etendard Exocet

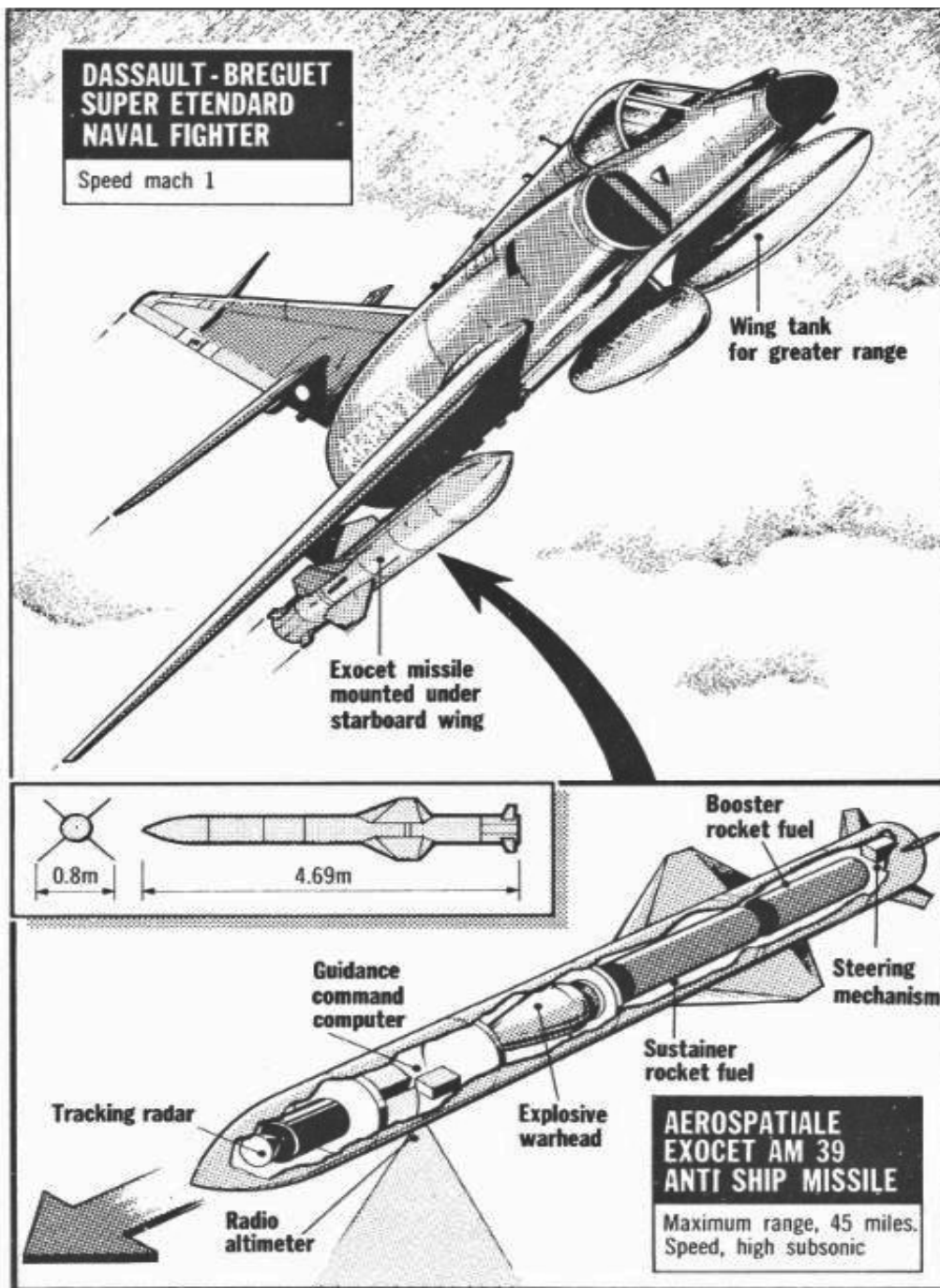


Figure reprinted from *The Falklands War*, by Paul Eddy, Magnus Linklater, and Peter Gillman, 1982, Copyright 1982 by Andre Deutsch.

The Exocet's real value is revealed when attacking enemy shipping. The French advertised the AM 39 Exocet to the Argentinians as a "fire and forget" weapon (Gerding

2002). From beyond the visual range (BVR), an aircraft can select the target from a radar display, fire the missile, then run to safety. Once launched, the missile skims the ocean's surface, while the internal navigation system – consisting of an active radar system – autonomously seeks out the target on the horizon. This makes the Exocet well-suited to the job of denying an enemy access to a contested area. The task of locating the target is simplified on the ocean's surface where the only radar return on the horizon is usually a high-profile enemy ship.

While the air-launched Exocet may be “fire and forget,” the weapon system is certainly not “purchase and forget.” In addition to the missiles and aircraft, the Exocet system purchased by Argentina required everything from spare parts for the missiles and delivery aircraft to pilots trained to proficiently shoot the missiles. In such an endeavor, Argentina needed to acquire and maintain both tacit and explicit knowledge of the Exocet system. Tacit knowledge is, “the product of a uniquely fertile social and intellectual environment composed of mentors and proteges.” (Gormley 2008b, 6). Conversely, explicit knowledge consists of, “engineering or formulations that can be recorded and passed easily from one place to another.” (Gormley 2008b, 6). In short, tacit knowledge is cultural and organizational and explicit knowledge is mechanical, technical, and portable. Developing expertise in Exocet operations would be challenging for pilots and maintenance personnel alike. The Argentine military activated a new naval squadron, the Second Attack Squadron, and sent their best pilots to France for familiarization training. By 1981, Argentina had not only obtained five of their ten Exocets ordered from the French, but also had pilots trained to use them (Eddy, Linklater, and Gillman 1982).

While the Argentine military may have had five missiles and delivery aircraft, the system was not fully functional at the close of 1981. One of the final requirements for the Exocets to become operational was the physical act of mating the missiles to the Super Etendard aircraft. The Argentine Air Force and Navy still lacked the tacit expertise to surmount technical difficulties encountered in the mating process; they were forced to ask France for a support team/crew to assist them. The French dispatched their team from the French aerospace company, Aerospatiale, in November 1981, only five months prior to the Falkland invasion. The French team proved invaluable in the early days of the conflict by helping properly mate the missiles to the aircraft and run critical function tests beyond the capabilities of Argentine technicians (Thomson 2012). Without the French team's help, Argentina's ability to use the Exocets during the conflict would have been doubtful (Freedman and Gamba-Stonehouse 1991).

By mid-April, 1982, it became clear to the Argentine government that the British would send a military response to the incursion. Argentina actively pursued ways to receive the additional five undelivered missiles, knowing each Exocet would play an important role in the defense of the newly held islands. However, when hostilities commenced in April 1982, the United Kingdom requested its NATO allies impose an arms embargo on Argentina, putting pressure on France to cancel or delay the shipment of the last five missiles to Argentina (D'Odorico 1994).

Despite the embargo and pledges of solidarity with the British, the French made a covert attempt to ship the five remaining Exocets through Peru (Coles 1982; Tweedie 2012). The British, understanding these missiles were likely destined for Argentina, sent a strongly worded telegram to France stating that shipment of the missiles would have, "a

devastating effect on the relationship between [the] two countries.” (Thatcher 1982, 3). There is additional evidence Argentina attempted to obtain their missiles through Libya. The British also discovered this plot, though it never came to fruition. The Exocets so concerned the British that they even attempted a clandestine raid by Special Air Service commandos on the Argentine mainland to eliminate Argentina’s Exocets on the runway (Harding 1981; Southby-Tailyour 2014; Taylor 2017).

Argentina ultimately never received shipment of the final five Exocets they anticipated before the end of the conflict in June 1982. However, the Argentine Navy used the five Exocets they did have to deadly effect against the British. When the British dispatched warships to the South Atlantic, they did so with the understanding that Argentina still could not properly mate its Exocets to the Super Etendards. Unbeknownst to the British fleet, the French assistance team had already dispatched to Argentina to correct the mating problem (Eddy, Linklater, and Gillman 1982). On 4 May 1982, two Argentine Super Etendards each fired an Exocet missile at British warships. One hit the ocean, while the other hit the HMS Sheffield with devastating effect.

The British Royal Navy deployed the HMS Sheffield, a Type 42 destroyer, in an anti-submarine capacity to protect the British fleet’s two aircraft carriers. When the Argentine Super Etendards fired their Exocets, they did so beyond the visual range of the ship and at such a low altitude, the aircraft themselves went undetected. When the HMS Sheffield’s crew finally realized that they were under attack, it was only seconds before the missile impacted the ship (Watson and Dunn 1984). Although the official British investigation claimed the 165-kilogram warhead on the Exocet failed to explode (a common problem for conventional munitions used by the Argentinians throughout the

conflict), officers aboard the Sheffield claimed the warhead did explode, contributing to the 20 dead and 27 injured sailors. Regardless of which account is accurate, a massive fire broke out, likely caused by the Exocet's onboard fuel, forcing the crew to abandon the ship. The HMS Sheffield eventually sunk on 10 May.

The British inability to detect and effectively defend themselves against a weapon flying only meters above the ocean, at near the speed of sound, contributed to Argentina's success (Corum 2002; Freedman 2005b). The HMS Sheffield's sinking was the first time since 1945 a major Western navy would come under sustained air attack, and was a sobering experience for the British who now clearly understood the threat the Exocet's posed (Freedman and Gamba-Stonehouse 1991; Speller 2002). The use of Exocet anti-ship cruise missiles forced the British fleet to alter operational tactics, reassess their naval strategy in the Falklands, and develop ad hoc countermeasures (Armstrong 1982; Pereyra 2006).

With two of five Exocets expended, the Argentine military needed to choose their targets carefully. The sinking of the HMS Sheffield boosted flagging Argentine morale. Several days prior to the HMS Sheffield's sinking, the nuclear submarine HMS Conqueror, sank the Argentine naval cruiser, ARA General Belgrano. This incident resulted in the loss of 321 Argentine sailors, nearly half the total loss of life on both sides of the conflict (Bluth 1987). On 25 May, Argentina struck another major blow to the British fleet with the sinking of the container ship, SS Atlantic Conveyor. On a mission to attack one of the two British aircraft carriers operating in the region, two Argentine Super Etendards each fired Exocets from long range at what they thought was one of the two carriers (Freedman and Gamba-Stonehouse 1991). Instead, the HMS Ambuscade, a

British destroyer, detected the launch and began to lay down a chaff pattern to confuse the incoming missiles (Omand 1982).³⁸ On this day, the chaff disbursed from the HMS Ambuscade confused the Exocets, sending them through the clouds to reemerge on the other side and lock on to another large target in the region, the SS Atlantic Conveyor, a civilian cargo vessel stocked with equipment intended for the eventual island invasion. Like the HMS Sheffield, the SS Atlantic Conveyor was destroyed by fire and sank, killing 12 sailors (Watson and Dunn 1984).

The final victim of Argentine Exocet attack would not meet such an ignominious fate. After the ARA General Belgrano was sunk, the Argentine Navy largely withdrew their fleet to the mainland. The sea-launched Exocets were then unusable (Bluth, 1987), but on 12 June, the final day of the conflict, the Argentine Army fired two sea-launched Exocets at the HMS Glamorgan from an improvised shore battery, which they created by attaching launch cannisters to a truck trailer..³⁹ The Exocet battery previously attempted an attack on 2 June, but one of the two Exocets failed to leave the canister and the other missed its target, falling harmlessly into the sea (Freedman 2005b). On 12 June however, one of these improvised batteries successfully fired one Exocet, in the third of three attempts, hitting the HMS Glamorgan in its helicopter hangar. This caused relatively minor structural damage, but killed 14 sailors. The Royal Navy attributed the resulting good luck to the actions of the ship's navigator who, at the last minute, altered the HMS

³⁸ After the sinking of the HMS Sheffield, the Royal Navy discovered, with French assistance, that they could use chaff – small strands of radar-reflective foil – to confuse the Exocet's targeting system. When dispersed in metallic clouds, the Exocet's targeting radar confuses the chaff cloud for a ship and reorients itself (Rivers 2001).

³⁹ Iranian-backed Houthi-forces would use a similarly improvised system in 2016, firing modified Chinese CSS-N-8 Saccade cruise missiles from Yemeni shores at American naval ships.

Glamorgan's course. This decision caused the missile to miss the ship's center, instead hitting an area where it would do the least damage (Inskip 2012; Watson and Dunn 1984).

The HMS Glamorgan was the last of three ships struck and damaged out of three successful Exocet attacks. Following the sinking of the HMS Sheffield, William Perry, then the American Undersecretary of Defense for Research and Engineering and future Secretary of Defense, suggested that the sinking of the HMS Sheffield would confirm the lessons of the INS Elia a decade prior. In his view, surface warfare ships had become remarkably vulnerable to precision guided weapons, changing the nature of military operations (Wicker 1982). By the 1990s, anti-ship cruise missiles would become the most important naval weapons in most countries' inventories due to their destructive capability and the ease with which they can be transported by both aircraft and even the smallest naval vessels to inflict reliable damage on their targets (Carus 1992).

Discussion

This chapter illustrates the role of cruise missiles in the Argentine decision to capture the Falkland Islands by force. I selected this case because it represents an example in which the models used in Chapter Three produced a relatively high predicted probability of militarized conflict initiation on the primary independent variable, cruise missile possession. The case study also identified several relevant issues that are worth noting regarding the lead-up to the Falkland Conflict. First, an enduring feature of the islands' history for 250 years was contention over which country held sovereignty over the archipelago. The United Kingdom, Spain, France, and Argentina have all claimed the islands for their own, but at no time in their history did they attempt to use appreciable

military force to assert those claims. Second, for 150 years prior to the Argentine incursion, the status quo political disposition of the islands was largely undisputed. It was not until after World War II that post-colonial sentiments in the United Nations and historical nostalgia in Argentina prompted a serious effort to negotiate an Argentine repatriation. Third, negotiations between the United Kingdom and Argentina in the years prior to 1982 appeared to indicate a British willingness, largely driven by economic concerns, to return the islands to Argentina. These three factors would indicate that the prospect of a military solution to the question of Falkland sovereignty was unlikely prior to the invasion.

However, as this case study illustrates, several factors converged to make invasion more likely. I argue that one of these factors was the Argentine procurement of air-launched Exocet anti-ship cruise missiles in the late 1970s, which offered the ability to deny a successful British military response to invasion. The Argentinians may have overestimated the effect these missiles would have on British calculations to respond with force. British military and political statements after the conflict indicate that British leadership underestimated Argentine military capability, especially where cruise missiles were concerned, and failed to offer a focused policy toward the Falkland Islands' political disposition. This British misperception contributed to an unwillingness to offer concessions in pre-invasion negotiations with Argentina. Argentine misperceptions provided room for the government to believe the capabilities provided by their newly acquired Exocets may provide the military advantage needed to dissuade British military retaliation.

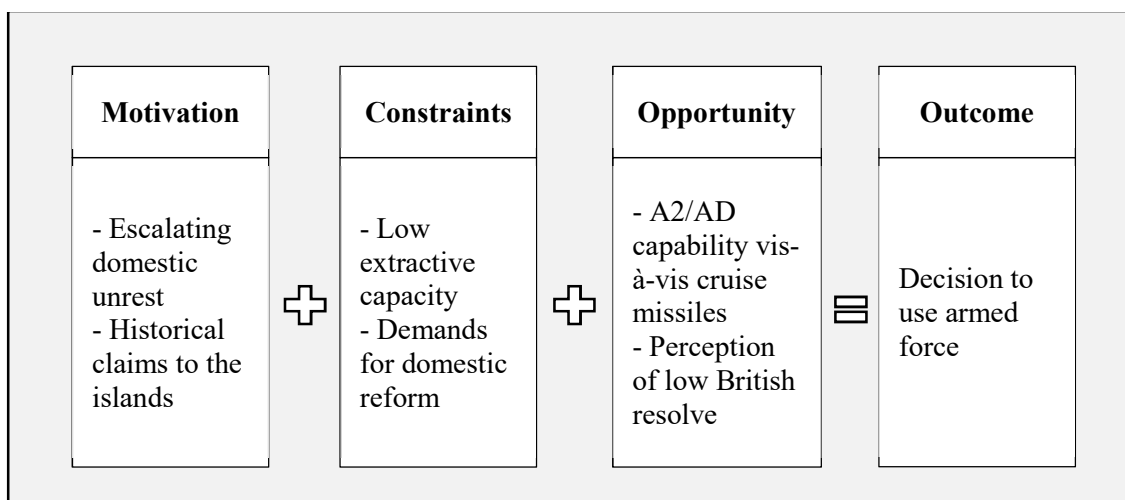
The purchase of Exocet anti-ship cruise missiles influenced Argentine behavior by increasing the chances that they would use force to achieve their foreign and domestic political goals. When combined with the domestic political context, Exocet cruise missiles played an important role in Argentina's strategic calculations. The advanced missiles allowed Argentina's military to expand their coercive options and strengthen the Argentine belief that an invasion would be successful. Knowing the only military option for the United Kingdom lay with the British Navy, possession of a weapon that could successfully deny or degrade British naval strategy promised to be a decisive factor should a response come to fruition. Ultimately, only a few more Exocets in the Argentine quiver may have been enough to thwart the British counter invasion, as later suggested by the commander of the British task force, Admiral Sandy Woodward (1992). The vigorous effort to make the missile systems fully operational immediately prior to the initiation of the conflict illustrates the important role the missiles played in the ultimate decision to invade. Despite only having a handful of these missiles ready, their unique capability to defend against enemy naval attack made the air-launched Exocets a key component of Argentine strategic calculations, increasing the likelihood of Argentine success in the face of flagging British resolve.

Recent events reinforced Argentine hopes of military success in several ways. First, the Shackleton Report exposed the reality that the islands were an economic drag on the United Kingdom, and though there may have been potential to exploit the yet-to-be discovered offshore oil deposits, reversing the economic trend would have been costly. Second, there was international pressure on the United Kingdom to settle the matter. U.N. Resolution 2065 gave Argentina a legitimate forum with which to press the issue

with the United Kingdom. The spirit of anti-colonialism in which the United Nations drafted the resolution may have given Argentina the perception of achieving the moral high ground. Finally, clandestine negotiations in which the British provided detailed proposals for transfers in sovereignty provided a solid indication to the Argentine government that the United Kingdom was interested in turning over the islands.

The United Kingdom's military posture in the late 1970s and early 1980s indicated a lack of resolve, and possible lack of ability, to respond to a military incursion in the Falklands. The British had already begun executing plans to significantly reduce, if not eliminate, their South Atlantic military presence. With the sale of the Royal Navy's aircraft carriers, they would soon lose the ability to respond to an out of area crisis with appreciable naval airpower. The perceived lack of resolve was only reinforced when Argentina adopted an apparent "try and see" coercive strategy when the Argentine government successfully landed a pseudo-military party on South Georgia Island in 1981, ostensibly testing British resolve over reclaiming the small territory (George 1991; George, Hall, and Simons 1971). Though the action provoked a British response, it was lukewarm, consisting of a small arctic patrol vessel and 22 Royal Marines.

The final element that reinforced Argentina's belief that the United Kingdom would not respond to an Argentine incursion related to the possession of the cruise missiles themselves. Having obtained both sea and air-launched Exocet cruise missiles, Argentina would have been reasonably confident that an attempt by the United Kingdom to retake the islands by force would be extremely costly for the Royal Navy in terms of men and material. Figure 4.2 illustrates Argentina's some of the key factors that went into Argentina's decision to initiate conflict.

Figure 4.2 Key Factors in Argentina's Decision to Invade

Note: A2/AD = Anti-Access/Area Denial. Adapted from Oakes, Amy. 2006. "Diversionary War and Argentina's Invasion of the Falkland Islands." *Security Studies* 15(3): 431–63

The Argentine junta had considerable reason to believe that they would increase their political capital with an armed takeover of the Falkland Islands. Domestic strife, social unrest, and a flagging economy pointed to a need to initiate a diversionary foreign conflict to bolster support for the military junta. In the face of a low extractive capacity that reduced the junta's ability to maintain sustained oppression, options less risky than the use of military force were unavailable (Oakes 2006). Successfully claiming the islands for Argentina after 150 years of British occupation would also resolve a 150-year cultural blight on Argentina's colonial history. Finally, though not yet substantiated, the belief since the early 1970s that oil reserves existed in the waters surrounding the islands promised a probable economic boon for both Argentina and the United Kingdom. This potential may itself have been a strong economic incentive to increase the vigor over which the two nations decide the matter of sovereignty. Oil revenues would inject a much-needed stimulus in both economies, and enable the Argentine government to pay

for required economic and social reforms to stabilize the turbulent domestic political situation.

The Argentine government, through selective strategic assumptions, believed the United Kingdom had low political utility in the South Atlantic (Hopple 1984). Since the 1965 U.N. referendum, the British government faced increasing international pressure to resolve the sovereignty issue in the Falklands. Economically, the Falklands had become a lead balloon. British citizens were increasingly disenchanted with paying to subsidize the island and the British government had been losing money on the islands for some time (Hoffmann and Hoffmann 1984). Militarily, the United Kingdom in the 1970s and early 1980s was executing a policy of global withdrawal. In the South Atlantic they signaled military abandonment with plans to remove and scrap the HMS Endurance and the cancellation of military improvement projects such as a new barracks and runway extensions in Port Stanley. Finally, the disinterested way in which the British conducted negotiations over the islands, in addition to secret entreaties for ways to hand over the islands and still save political face, further signaled a desire to pass the islands back to Argentina.

These considerations notwithstanding, actual British resolve was not public information. The most significant problem faced by the Argentine military, therefore, was the possibility that the British would decide to send a fleet to retake the islands. Although Argentina believed they would simply occupy the islands and the British would protest to little effect – as had happened often in the 1970s – the possibility of a naval

confrontation loomed.⁴⁰ By obtaining ship-launched MM 38 and air-launched MM 39 Exocet anti-ship cruise missiles, the Argentinians believed they raised the potential military costs for the Royal Navy, lessening the risk of a military response and improving their bargaining position (Fearon 1995). What was uncertain in the Argentine military was just how much weight that cost would have in the British government.

Given the Argentine perception that the British were not likely to respond militarily to an incursion to the islands, the threat of anti-ship cruise missiles, especially the more dangerous air-launched MM 39 Exocets, may have been just enough to increase the probability that the British would not respond. What is clear is that the British, for their part, not only believed Argentina lacked the capability to deliver their air-launched cruise missiles to a target, but also severely underestimated the damage the Exocets could inflict on the British fleet (Eddy, Linklater, and Gillman 1982). This misunderstanding of key pieces of strategic information helped to negate any effect the Exocets may have had on Argentina's ability to extract a better outcome from the dispute. However, once the conflict was under way, the Exocet's capabilities became clear to the British Navy, forcing significant changes to their operational strategy. In fact, Admiral Sandy Woodward, the Royal Navy force commander in charge of Falkland operations, stated after the war that, had one of the Exocets hit a British aircraft carrier, the British mission would have likely been over (Woodward 1992).

⁴⁰ In the 1970s, multiple islands had been taken by force with little or no repercussions. Iran seized several islands in the Persian Gulf, China occupied the Paracels, Vietnam seized the Spratleys, Indonesia took East Timor, and Turkey occupied a portion of Cyprus. While each of these incidents garnered international attention and often condemnation, in the end, they were successful (Hopple 1984).

Thus, in the case of the Falklands Conflict, Argentina's private knowledge of the Exocet's capability likely increased the probability that Argentina, a state that tolerated British occupation of the islands for 150 years, would choose to initiate an armed confrontation with the United Kingdom over the islands. In turn, the Britain's intelligence failure regarding Argentina's actual cruise missile capability made the former more likely to opt for a military response to the Argentine invasion. Combined, these two conditions helped to escalate the long-simmering Falklands dispute into a militarized interstate crisis.

The Falklands Conflict provides an ideal example of how cruise missile possession may increase the likelihood of conflict initiation. This case demonstrates that a dispute that simmered relatively peacefully for a century and a half could suddenly come to a boil, in part influenced by the introduction of the potential anti-access/area denial capabilities provided by cruise missiles. By increasing the chances of success, Argentina's possession of cruise missiles helped rationalize the Argentine junta's decision to occupy the islands by force, believing that the British, suffering from an incoherent foreign policy and their own domestic problems, would likely not opt to enforce their sovereignty claims. It is important to point out that the cruise missiles alone did not cause the conflict or provide such an overwhelming incentive that invasion would prove irresistible or inevitable. Generally, increases in military capability would produce the opposite effect, by simply allowing the state with growing capability to extract a better bargain, avoiding war altogether (Fearon 1995; Signorino 1999). However, *rapid* shifts in the distribution of power – especially those which are essentially private information to one party – can increase the likelihood of conflict if the opposing state is

unaware of that shift (R. Powell 2012). The latter appears to have played a role in the Falklands Conflict.

The argument presented above is that cruise missiles increased the probability that Argentina would initiate the use of military force by providing a qualitatively important capability – unrecognized by the British – that convinced the Argentine government that invasion was worth the risk. Next, I expand on these findings by illustrating another way cruise missiles may influence how states act in coercive bargaining situations. In Chapter Five, I present the case of “missile diplomacy” exercised by the United States following the 1991 Persian Gulf War. The American case typifies the “new” utility of cruise missiles in the third phase of cruise missile development whereby advancements in precision navigation provide a capability to exercise military force as coercion and/or punishment in situations in which the states may desire to limit commitment or resources to further international policy.

CHAPTER FIVE: U.S. CRUISE MISSILE DIPLOMACY, 1992 – 2000

Like Chapter Four, this case study illustrates the quantitative results from Chapter Three. It presents a qualitative example of how the possession of advanced land attack cruise missiles increased the probability the United States would use military force by providing viable coercive options to address security challenges while lowering the risk to troops and minimizing collateral damage. Unlike the case study presented in Chapter Four, which represented a relatively narrow timeframe centered around a specific incident, the 1982 Falkland Conflict, this case study spans a greater timeframe encompassing several instances identified by Chapter Three's data analysis as having a high predicted probability of occurrence. Specifically, I examine the "Tomahawk Diplomacy" (Pretsch 1999, 1) that characterized American foreign policy from 1992-2000. During this time, the United States increasingly favored the Tomahawk land attack cruise missile as a means to resolve foreign policy challenges. Throughout the 1990s, the United States launched Tomahawks on eight separate occasions against a variety of state and non-state adversaries. Though this chapter focuses on the cruise missile events of the 1990s, it is worth noting that the United States continues to rely on land attack cruise missiles, attacking adversaries on nine occasions over eighteen years. In other words, in the 27 years since the 1991 Persian Gulf War, the United States has initiated military force – using cruise missiles – at an average rate of more than once every other year.

The examples presented here demonstrate that a state armed with cruise missiles, particularly modern and technologically sophisticated derivatives such as the American Tomahawk, Indian BrahMos, or Russian Kalibr missiles, may employ force as a coercive foreign policy tool in ways states without these missiles cannot. These states may not

only maintain the ability to attack an adversary's targets with stealth and precision, but exploit these attacks as a means of threatening and demonstrating punishment for future transgressions. The purpose of this case study is to examine how the United States, armed with cruise missiles, lowered its threshold for the exemplary use of force to punish undesirable adversarial behavior, not otherwise meeting the level of vital state interest; compel changes in the status quo or reverse a state's actions; and deter future transgressions (Byman, Waxman, and Larson 1999; George 1991; George, Hall, and Simons 1971; Schelling 2008).

The United States, seizing upon a revolution in military affairs,⁴¹ discovered a new role for cruise missiles following the 1991 Persian Gulf War. Cruise missiles promised an innovative way to exercise coercive diplomacy and punishment abroad while reducing the risk to troops and lowering the degree of commitment associated with military force deployments (Brigety II 2007; Butfoy 2006; Sparks 1997). Twenty years after the Vietnam experience, which continued to haunt the American psyche, the public sustained a resistance to long wars with substantial casualties (Hendrickson 2002b; T. C. Morgan and Campbell 1991). President William J. Clinton capitalized on the cruise missile as a way to demonstrate resolve in a post-Cold War world increasingly punctuated by small conflicts, terrorism, and genocide while avoiding the entanglements that come with long term conflicts (Luttwak 1994). Late in President Clinton's

⁴¹ The idea of a "revolution in military affairs" is derived from Soviet military analysts of the 1970s and 1980s who foresaw a coming shift in battlefield operations driven by advances in military technology. Future militaries would no longer be dependent on massive troop deployments and kinetic effects. Instead, future conflict would be marked by a movement toward improved command and control, electronic and information warfare, and non-lethal methods of conflict (Metz and Kievit 1995).

administration, General Hugh Shelton, Chairman of the Joint Chiefs of Staff, noted that when presented with a panoply of retaliatory options, President Clinton, “went straight for the cruise missile option” (Quoted in Zenko 2010, 69) to limit civilian casualties.

Although the United States possessed cruise missiles for a half century prior to the 1990s, technological limitations such as imprecise and complicated navigation systems and nuclear-focused missions constrained the ways in which national leaders and military strategists thought about these weapons (Betts 1982; Mustin 1988). But in the 1990s, the cruise missiles’ technical and political value changed after the missile’s success in the 1991 Persian Gulf War. Technical improvements to accuracy, navigation, and range increased operational control. Increased control took the cruise missile beyond its nuclear-focused mission, enabling new and previously impractical conventional missions. Politically, the fall of the Soviet Union allowed new approaches to using force in foreign policy without the fear of inciting a conflict between the superpowers (Pfaltzgraff and Shultz 1992). Cruise missiles offered the ability to strike at foreign targets while avoiding the risk of generating unpopular military casualties; miring the state in nebulous and open-ended foreign military commitments; and eroding popular support for foreign conflicts. This case study seeks to understand these changes to explore how the capabilities cruise missiles offer may increase the likelihood a state will engage in a militarized interstate dispute.

The case study proceeds in three parts. First, I explain how casualties and collateral damage affect American public opinion and domestic support for armed conflicts. Using survey data from the end of the Cold War, I reveal how the American domestic political environment in the 1990s shaped a need to avoid collateral damage, in

general, and military casualties, specifically. Second, I introduce the Tomahawk land-attack cruise missile. A leap forward in technology, the Tomahawk became known for its success and capabilities in the 1991 Gulf War, quickly becoming, “‘the weapon of choice’ and the primary means of delivering a military punch to achieve political gain.” (Sparks 1997, xix).⁴² Third, I examine incidents of cruise missile use from the end of the 1991 Persian Gulf War to the 1999 Operation Desert Strike in Iraq. I show that the Clinton Administration felt political pressure to act decisively when faced with security threats, but the lessons learned from unpopular quasi-military adventures of the early 1990s constrained their choice of politically acceptable actions (e.g. the humanitarian intervention in Somalia). Thus, the administration found cruise missiles to be the optimal means of using military force in a politically acceptable way (Adler 2000; Hendrickson 2002b; O’Hanlon 2003). Post-Cold War American presidents face popular and personal moral pressures to avoid casualties to both American troops and foreign civilian populations when considering military options. The modern cruise missile, through flexibility, precision, and reliability, makes a military response to security concerns a viable and attractive option, and perhaps the only politically tenable military option available.

⁴² The air-launched cruise missile (ALCM) used by the U.S. Air Force, and the sea-launched cruise missile (SLCM), or Tomahawk, used by the U.S. Navy are derivatives of the same basic design with the major difference between the two relating to the types of warheads they can carry. The ALCM can carry both nuclear and conventional warheads, while the SLCM carries conventional munitions only. Because the SLCM can launch from nearby naval vessels; whereas the bomber aircraft carrying the ALCM require long flights, refueling, and possible basing options; the SLCM is usually the preferred weapon. Therefore, in this chapter, I focus on the SLCM using its common moniker, “Tomahawk,” though either weapon may be used, depending on mission requirements.

Casualties and Public Opinion

Research on the effect of casualties on public opinion varies considerably. It appears public support for conflict goes beyond policy objectives and simple calls for revenge. Morgenthau (1948), speaking of the profound influence world public opinion can have on the actions of a nation, put it best:

Whenever the government of any nation proclaims a certain policy or takes a certain action on the international scene, which contravenes the opinion of mankind, humanity will rise regardless of national affiliations and at least try to impose its will through spontaneous sanctions upon the recalcitrant government. The latter, then, finds itself in about the same position as an individual or a group of individuals who have violated the mores of their national society or of one of its subdivisions and are by society's pressure either compelled to conform with its standards or be ostracized. (198)

Although international power would seemingly be served in the reduction, or elimination, of the enemy's population, postulated Morgenthau, ethical limitations built into the international framework keep such options in check, delivering an incentive to limit casualties in the name of legitimacy. As war between nations became increasingly about contesting armies, the moral imperative to avoid killing noncombatants became a duty, culminating in the Hague conventions in 1899 and 1907 (Morgenthau 1948).

In his examination of the Vietnam and Korean conflicts, Mueller (1973) uncovered evidence that Americans are more sensitive to relatively small losses in the early stages of a conflict, but over time, sensitivity to casualties erodes, requiring larger and larger losses to sway public opinion. Mueller noted that the American populace uses heuristics based on the attitude of the president, the position of the individual's political party, and predisposed ideologies (i.e. hawks vs. doves) when forming their opinions on

whether the United States should be engaged in a conflict and whether the conflict was ultimately worthwhile.

Conversely, Jentleson (1992) and Jentleson and Britton (1998) asserted that variations in public support are better explained by the conflict's public policy objective. These researchers demonstrated that there are three categories of principle policy objectives that purposively shape opinion: foreign policy restraint; internal political change; and humanitarian intervention. People are more likely to support military action to force or coerce an enemy acting aggressively against the United States or its interests than they are to exercise force to engineer political change in another country. A third type of military intervention, humanitarian operations, demand clear strategies and multilateralism to sustain a positive public opinion in the wake of unsuccessful interventions such as the 1993 American intervention in Somalia.

Larson (1996) and Larson and Savych (2007) built on this work, showing that the public support for military force employment is largely contingent on the government's and its allies' efforts to avoid casualties. Those collateral casualties that do result, which some studies show are generally accepted as part of doing military operations (Berinsky 2009; Dieck 2015; Gartner and Segura 1998; Gelpi, Feaver, and Reifler 2009; J. E. Mueller 1973; K. A. Osgood and Frank 2010), are only tolerated when the costs and benefits of the operation, as opposed to the expected casualties, are understood and efforts are made by the government to avoid collateral damage as much as possible.

The 1991 Persian Gulf War punctuated the end of the Cold War. Public concerns about American casualties and collateral damage increased in light of the newfound realization that precision weapons could reduce both military and civilian casualties,

while still meeting military objectives (Larson and Savych 2007). This increased concern constrains the President's ability to use armed force, shaping the type of military operations regarded to be politically possible (Byman, Waxman, and Larson 1999). Part of the reason for this aversion to casualties may be, paradoxically, a result of the Persian Gulf War's overwhelming military success, demonstrating the power of precision high technology weapons. Although battle deaths on the American side were projected to be in the thousands, a number deemed acceptable to the public at the time given the importance of the political objective, only 294 American were killed, and of these only 149 deaths were battle related (O. R. Holsti 2011; J. E. Mueller 1993). Consequently, American popular support for the intervention remained high throughout the conflict, even if it was to drop in the long run with many Americans believing the United States should have removed Saddam Hussein from power in Iraq (CBS Staff 2001).⁴³

Aside from arguably superior training and doctrine, American technological superiority was largely credited with the scant loss of life on the side of the allied coalition sent to expel Iraq from Kuwait ... and the huge loss of life on the Iraqi side (Houlahan 1999). Effectively, the 1991 Gulf War led domestic audiences to expect few casualties in future conflicts. Table 5.1 shows that by 1999, the number of American lives that might be lost in a conflict was an overwhelming factor (86%) for support for any future military actions, followed closely by the number of civilians who may be killed (79%) (Larson and Savych 2007).

⁴³ A CBS News poll conducted in 2003 found that public opinion as to whether or not the Gulf War had been worth it dropped from a 60% approval rating in 1993 to 51% in 2003 (CBS Staff 2001).

Table 5. 1 Importance to Americans of Civilian Deaths Using the Military

“No one wants our nation to get into any conflicts in the future, but as in the past, our leaders might someday decide to use our armed forces in hostilities because our interests are jeopardized. I know that this is a tough question, but if you had to make a decision about using the American military, how important would each of the following factors be to you?”	Affirmative Responses (Percentage)
Number of American lives that might be lost	86
Number of civilians who might be killed	79
Whether American people will support	71
Involvement by major power (e.g. USSR PRC)	69
Length of time fighting	61
Possibility of failure	56
Whether allies/other nations will support	56
Fact that we might break international laws or treaties	55
Cost in dollars	45

Source: Americans Talk Security #9 poll conducted September 7-18, 1999, N=1005. Quoted in Larson and Savych (2007, 4) and Larson (1996, 7).

The Clinton administration inherited an American public who increasingly expected low American casualties. Elected under a domestic platform, critics worried President Clinton would be reluctant to continue the international engagement that characterized his predecessors, Ronald Reagan and George H.W. Bush. But by 2000, Clinton’s presidency would be marked by a number of limited military operations including multiple strikes in Iraq, Sudan, Afghanistan, and Kosovo (Butfooy 2006). Aided by new technologies, a changed international political landscape, and a Congress willing to defer war powers to the president (Hendrickson 2002b), the conditions were set for President Clinton to embark on a proactive international agenda.

Marking a drastic change from his predecessors who governed in the context of collective defense and containing communism, Clinton's national security strategy reflected a new direction, engagement and enlargement (Clinton 1994; Harden 1995). Clinton was not bound by the strategic limits of Cold War bipolarity, but was free to firmly establish a new role for the United States as global hegemon willing to exact punishment day or night at a time and place of its choosing, while images of precision smart bombs guided through enemy windows played on American television sets.

The Clinton Presidency and a Revolution in Military Affairs

Long range precision bombing presented a revolution in military affairs. This technological revolution promised to deliver low casualties as technological superiority increased (Metz and Kievit 1995). The strategy for defeating a country from the air had evolved since General Giulio Douhet's (1983) treatise on aerial warfare, *The Command of the Air*, in 1921. Air power strategy no longer called for a state's cities to be decimated to bend the people's will. Instead, precision strikes could make pinpoint attacks on specific enemy centers of gravity to disrupt the enemy's ability to operate as occurred in the Persian Gulf War (Lambeth 1997; Warden III 1988). By 1990, new technologies largely corrected the deficiencies of earlier airpower theories, making it possible to strike at the enemy's vital centers at an acceptable risk to the attacker (Mets

1998).⁴⁴ Cruise missiles embodied the concept of “risk free” and decisive military action (Sparks 1997). Their high-profile use in the Persian Gulf War demonstrated that they are versatile weapons able to strike a target, with little or no risk to military personnel, day or night and in any weather (Cohen 1993). While F-117 stealth fighter aircraft attacked under a cloak of darkness, American cruise missiles, flying below enemy radar, attacked Iraqi targets during the day resulting in an around the clock bombardment throughout the air campaign.

A quick study of the technological lessons learned from the Gulf War, President Clinton wanted to appear decisive abroad (Figure 5.1), while still adhering to his political platform of domestic reform (K. A. Osgood and Frank 2010). The ability to wage limited warfare, with limited objectives, resources, and commitment, seemed tailor-made for the revolution in military affairs and the unmanned, precision weapons that came with it (R. E. Osgood 1957). The nature of warfare was transformed in a way it had not been since the creation of nuclear weapons. Events abroad no longer required states to commit troops, material, and political capital to extol punishment for international transgressions. Instead, a state needed only a ship nearby, with the proper weapons to attack a handful of symbolic targets to send a coercive message, all the while limiting collateral damage

⁴⁴ For example, in the interwar years between World War I and World War II, airpower strategy in the United States was dominated by the theories produced by the Air Corps Tactical School in Montgomery, Alabama, and inspired by General Billy Mitchell’s thoughts on the use of airpower in combat from World War I. Breaking from the previous doctrine that relegated airpower to the tactical support of ground troops on the front lines, these theories proposed strategic strikes on enemy vital centers, such as industry and civilian morale, as a means of bypassing front-line warfare. The combined bomber offensive in Europe during World War II was largely the product of this thinking. But due to the limited navigational and targeting technology of the time, this strategy was incredibly inefficient and costly in terms of lives and material.

through precision strikes. Zenko (2010) dubbed these types of operations “Discrete Military Operations” or “a single or serial physical use of kinetic military force to achieve a defined military and political goal by inflicting casualties or causing destruction, without seeking to conquer an opposing army or capture or control territory.” (2) These limited operations typified American military conflict in the 1990s.

Figure 5. 1 Political Cartoon Depicting an Indecisive President Clinton Circulated by the White House News Analysis Staff, 1993



Uncited reprint from Office of Speechwriting, and David Kusnet. “[Press Clips] Friday, July 2, 1993.” Clinton Presidential Records (2017).

The revolution in military affairs also exposed a troubling change in the international order. With the increasing automation and digitization of warfare, a gap began to widen between states who “have” advanced military technology and states who “have not,” exposing a growing rift between the United States and just about every other state after the fall of the Soviet Union (Butfoy 2006). This gap increased the

importance of paying attention to purpose, strategy, doctrine, and adaptation before throwing time and resources into “silver bullet” (Cooper 1997, v) weapon technology without considering the strategic implications. But in 1991, following the successes of the Gulf War and frustrations over Somalia that would see public support plummet in the wake of peripheral conflicts that result in high profile American casualties (Burk 1999), the Clinton administration would embrace just such as silver bullet. The Tomahawk cruise missile promised to not only limit political commitment, but to limit casualties while appearing decisive on the domestic and international fronts (Harden 1995). As weapon precision increased, the force to be applied became more “humane” and therefore more acceptable (Brigety II 2007; Coker 2001).

The United States entered the last decade of the Twentieth Century in a changing world. The Soviet Union would soon be gone leaving a unipolar global political environment ostensibly led by the remaining superpower. But this was a world increasingly marked by a resurgence of animosities and regional conflicts, great powers unwilling to risk soldiers in combat, and an American political discourse increasingly concerned with military casualties (Luttwak 1994, 1996). In this emerging context, the Iraqi invasion of Kuwait provided an opportunity to highlight new weapons and doctrine that leveraged the revolution in military affairs by significantly reducing collateral damage. The revolution provided the impetus for an expectation that future conflicts, limited in scope, would entail little risk to American troops. Precision autonomous weapons brought the belief that targets could not only be attacked at will, but attacked in such a way as to leave a reasonable expectation that civilian collateral damage would be held to a minimum. Cruise missiles were a key weapon in this context. Given this

framework, the next section will discuss the cruise missiles the Clinton administration had at its disposal in the 1990s.

The Tomahawk's Role in U.S. Coercive Strategy

The highest profile cruise missile in the 1990s was the sea-launched Tomahawk Land Attack Cruise Missile (TLAM). The Tomahawk presented an evolutionary leap in cruise missile capability, breaking from the cruise missile's historical role as a relatively unsophisticated anti-ship missiles to that of a highly accurate and maneuverable weapon with revolutionary area penetration capability. With the change in attention from nuclear firepower to conventional accuracy and range toward the end of the Cold War, the Tomahawk's production stood to transform the way the United States thought about the strategic application of force.⁴⁵ No longer focused solely on the nuclear mission, yet fighting limited conflicts like those in Vietnam, Korea, and Grenada, American policymakers finally had a weapon that could fill a strategic gap. Missiles provided a rapid response to limited threats that required a choice between inaction. They also minimized the risk of appearing weak or irresolute, and helped avoid action that could escalate into larger, unwanted, conflicts (Brigety II 2007).

The Tomahawk provided the American military with the capability to strike deep behind the enemy's borders at will, bypassing defensive systems, and disrupting

⁴⁵ After the fall of the Soviet Union, the threat of mutually assured destruction abated driving the U.S. political and military focus to shift to non-nuclear regional conflicts and threats, such as those exemplified by the Iraqi invasion of Kuwait in 1991. Such a change in focus away from strategies involving nuclear weapons required new thinking in conventional deterrence and global strategy (Alston 2008; Gerson 2009; T. Paul 1995; T. V. Paul 1995; Tannenwald 1999)

equilibrium. It could do all this while virtually denying the enemy's ability to neutralize those costs or respond in kind (Byman, Waxman, and Larson 1999). In short, the Tomahawk's ability to strike deep in enemy territory to directly affect the adversary's center of gravity was, and remains, the embodiment of the B.H. Liddell Hart's "indirect approach" (Hart 1991). Table 5.2 presents the Tomahawk's technical specifications.

Table 5.2 Consolidated Tomahawk Land Attack Cruise Missile Specifications

Initial Operational Capability	1984
Length	6.25 meters
Wingspan	2.67 meters
Speed	880 kilometers/hour
Range	1250-1600 kilometers
Guidance	INS; TERCOM; DSMAC; GPS
Propulsion	Cruise turbo-fan engine; Solid fuel booster
Warhead	W80 Nuclear Warhead; 1000-pound conventional warhead; conventional submunition dispenser with bomblets
Accuracy (Circular Error Probable)	10 meters

Note: Specific characteristics differ from model to model. INS = Inertial Navigation System; TERCOM = Terrain Contour Mapping; DSMAC = Digital Scene Matching Area Correlator; GPS = Global Positioning System

Derived from "Tomahawk Cruise Missile." 2017. U.S. Navy Fact File.

http://www.navy.mil/navydata/fact_display.asp?cid=2200&tid=1300&ct=2 (June 20, 2017) and Center for Strategic and International Studies. 2016. "Tomahawk." Missile Threat. <https://missilethreat.csis.org/missile/tomahawk/>.

Named for the Native American war axe, the United States Navy describes the Tomahawk as, "an all-weather, long range, subsonic cruise missile used for deep land attack warfare, launched from U.S. Navy surface ships and U.S. Navy and United Kingdom navy submarines." (Chief of Information 2017). There are three variants of the

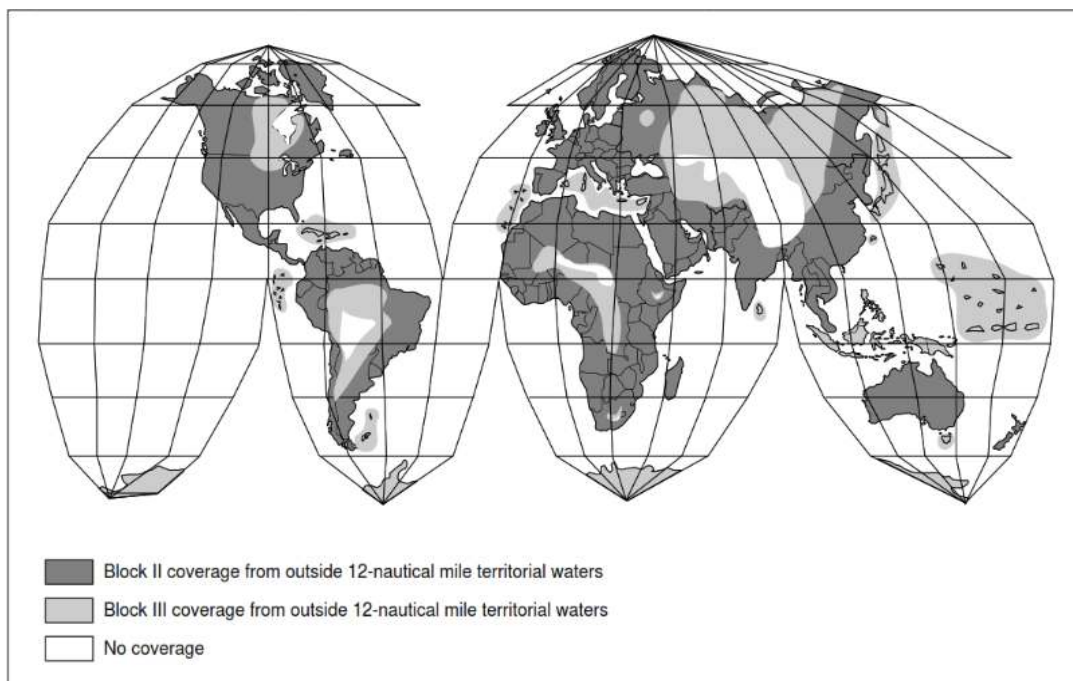
Tomahawk cruise missile. The Tomahawk Block II nuclear variant (TLAM-N), an air-launched cruise missile, utilizes INS and TERCOM for navigation and contained a W80 nuclear warhead capable either a five or 150 kiloton yield (The W80 Warhead 2007). A conventional variant of the Block II, the TLAM-C, was a sea-launched variant of the Block II and the cruise missile workhorse of the 1991 Persian Gulf War, launching 288 TLAM attacks from 16 surface ships over the course of the short war (United States Department of Defense 1992). Despite lacking the accuracy of laser guided precision weapons, the Block II complemented the F-117 Stealth Fighter, enabling coalition forces to pressure the Iraqi military 24 hours a day while minimizing the risk to aircrews (Winnefeld, Niblack, and Johnson 1994).⁴⁶

The Tomahawk's success in the Gulf War demonstrated unmanned, stealthy platforms could now strike accurately from a distance almost anywhere on the globe (Figure 5.2), a lesson that would prove invaluable in future conflicts (United States Department of Defense 1992). In 1993, the Tomahawk Block III entered service incorporating GPS guidance, extended range, and greater accuracy. The Block III was first employed in Operation Deliberate Force to strike targets in Bosnia in 1995 and again in Iraq in 1996 (Federation of American Scientists 2016). The latest variant of the Tomahawk, the Block IV, is 60 percent more accurate (Stevens, Spence, and Young 1995), contains an onboard camera for damage assessment and the ability to loiter over an area for ad-hoc long range targeting, and the longest range of any sea-based weapon - 1,000 miles (Pallone 2017; Tomahawk Cruise Missile 2017).

⁴⁶ In all, 333 cruise missiles were used in the Gulf War including TLAMs, CALCMs, and the Standoff Land Attack Missile (SLAM) (Cohen 1993).

The Tomahawk's first successful combat venture was the 1991 Persian Gulf War. From the initial phases of the campaign, the Tomahawk was used to attack heavily defended targets in Baghdad, leveraging its ability to fly largely undetected and in any weather condition. Though 32 Conventional Air-Launched Cruise Missiles (CALCMs) were also sent to Iraq – fired from B-52 bombers rather than navy destroyers and submarines – they represented only a small portion of the total cruise missiles force (Stevens, Spence, and Young 1995). As there were no CALCMs prepositioned in forward deployed location such as Diego Garcia in the British Indian Ocean Territory, B-52s needed to be armed in the United States and flown on a 14,000 mile round trip to the area of operations (Stevens, Spence, and Young 1995).

Figure 5.2 Areas Covered by the Tomahawk's Range



Reprint from Stevens, Ted, Floyd Spence, and CW Bill Young. 1995. "National Security and International Affairs Division B-256664." <http://www.dtic.mil/docs/citations/ADA296538> (August 5, 2017).

It was much more effective for the American military to lean on the Tomahawk which could be carried aboard Navy ships and submarines in the Persian Gulf, Red Sea, and Mediterranean Sea (Cohen 1993). However, because engineers had not yet introduced GPS to the Block II model, and satellite navigation was relatively new to military operations, the Tomahawks were limited by their TERCOM navigation systems which required observable land features to operate. Navy target planners were concerned the featureless desert in southern Iraq would not provide the features required for accurate navigation (Stevens, Spence, and Young 1995). In response to this concern, the Navy devised a clever work-around: they programmed their missiles to fly over the Zagros Mountains of Iran in order to ensure accurate navigation before turning west to strike targets in Baghdad (Atkinson 1993). The Tomahawk taught military planners that it was possible to strike vital Iraqi targets early in the campaign which could have otherwise resulted in unacceptable losses of aircraft and aircrews. While the exact number of missiles that reached their targets is difficult to determine due to lack of verifiable battle damage assessments, the Center for Naval Analyses and the Defense Intelligence Agency believe cruise missiles achieved results comparable to those of manned aircraft during the Gulf War with approximately 75% reaching their desired target. Manned aircraft, such as the F-117 were successful 80% of the time (Cohen 1993; Stevens, Spence, and Young 1995).

The Tomahawk Land Attack Cruise Missile represents the culmination of nearly 100 years' worth of weapon innovation. From the cruise missile's conception as a weapon that could strike deeper behind enemy lines on the battlefields of World War I, to the embodiment of the Hart's "indirect approach" in the 1991 Gulf War, the cruise

missile offered American leaders a low-cost coercive power. As President Clinton would discover in the 1990s, the Tomahawk was the ideal weapon to demonstrate the resolve expected of the sole remaining post-Cold War superpower.

However, the cruise missile's development required intense and lengthy advancements, particularly in the field of navigation, to make the concept of unmanned, precision strike a reality. It was not until the advent of more accurate navigational systems, culminating in integration of highly accurate satellite navigation systems (i.e. Global Positioning Systems), that the cruise missile would present itself as a reliable enough weapon against targets while producing minimum collateral damage. President Clinton would discover soon after his inauguration in 1993 that the cruise missile's accuracy enabled him to act with force against international problems, yet avoid the entanglements associated with troop deployments.

A New World Order

In his speech before Congress in 1991, President George H.W. Bush outlined the coming of a "new world order," consisting of diverse nations seeking peace and security, free of the specter of the recently-concluded Cold War (Bush 1991). While the precise definition of the new world order may be debatable, what had emerged since the fall of the Soviet Union was a world increasingly characterized by nationalism, extremism, and regional conflict (Nye 1992). When President Clinton began his presidency in 1993, he found himself governing a nation trying understand its role in a rapidly changing political world. Elected on a platform arguably oriented more toward domestic economic reform than international issues, the new president's foreign policy focused more on Arab-Israeli

peace than on simmering terrorist movements and Iraqi sanctions (Pear 1992). In the wake of the Gulf War, President Clinton would need to develop a foreign policy strategy that could deal with post-Cold War threats while protecting American interests abroad. The changing security environment required a new coercive strategy based on precision conventional weapons. Judging by the prolific exploitation of the Tomahawk in the 1990s and beyond (Table 5.3), it appeared the cruise missile would become an integral part of that coercive strategy.

Table 5.3 U.S. Tomahawk Use by Year, 1991-2018

Year	Incident/War	Country	No. Used
1991	Gulf War	Iraq	288
1993	Operation Bushwhacker	Iraq	23
1993	U.N. compliance enforcement	Iraq	69
1995	Operation Deliberate Force	Bosnia	13
1996	Air defense targets	Iraq	44
1998	Retaliation for U.S. embassy bombing	Afghanistan/Sudan	79
1998	Operation Desert Fox	Iraq	415
1999	Operation Allied Force	Serbia/Montenegro	218
2001	Operation Enduring Freedom	Afghanistan	50
2003	Iraq invasion	Iraq	802
2008	Al-Qaeda militants	Somalia	2
2009	Al-Qaeda militants	Yemen	2
2011	Operation Odyssey Dawn	Libya	112
2014	ISIS targets	Syria	47
2016	Response to anti-ship missile attack	Yemen	5
2017	Response to Syrian chemical attack	Syria	59
2018	Response to Syrian chemical attack	Syria	100+

Source: Adapted from Griffin, Andrew. 2017. "Tomahawk Missiles: What Are the Weapons Dropped in Syria Air Strikes and What Do They Mean?" *The Independent*. <http://www.independent.co.uk/life-style/gadgets-and-tech/news/tomahawk-missiles-syria-air-strikes-what-are-they-mean-power-precision-statistics-a7672666.html> (July 11, 2017).

Coercive diplomacy calls for, "the use of threats and commitments to demonstrate resolve" (Leng 1983, 381) over the course of international bargaining. Yet, these threats may be backed up and punctuated by limited, exceptional, uses of force to demonstrate

resolve (George 1991; George, Hall, and Simons 1971). In the Cold War, bargaining between states was dominated by the state's ability to match or dominate its adversary's nuclear capabilities while at the same time using bluffs backed by credible force (Fearon 2002; Schelling 1956; Wagner 1982). As the bipolar nuclear threat faded, President Clinton faced with new and ambiguous challenges to American interests that were likely to emerge with little or no warning.

With the threat of an engagement escalating into a nuclear conflict between the superpowers set aside, the United States would have a free hand to intervene when its interests are threatened with coercive capabilities not commonly seen in American history (Haass 1994, 1999). Following the response to the Iraqi occupation of Kuwait, the American message was that incursions into another state's sovereignty would not be tolerated. The United States signaled to the international community that potential threats facing the new president, often even those peripheral to American interests, may be met with a military response. Possible provocations requiring the exercise of military force could, in the early 1990s include hostage rescues, punishing terrorist organizations, and sanction enforcement. In theory, such threats would be dealt with successfully if limited in scope, duration, and force (Haass 1994).

Missile Diplomacy and Iraq

In the waning days of his presidency, President George H.W. Bush coerced Iraq into complying with United Nations' (U.N.) sanctions using limited cruise missile attacks. President Bush set a precedent for President Clinton and highlighted the cruise missile's non-nuclear coercive utility in the post-Cold War era. The U.N. was concerned

about Iraqi reprisals against its civilian population after the cessation of hostilities in Iraq. The Kurdish population in northern Iraq continued to be particularly at risk. The U.N. then enacted Resolution 688 (U.N. Security Council 1991b) to put international pressure on Saddam Hussein to discontinue his repression of the Iraqi civilian population.⁴⁷ To coerce Iraqi compliance, the United States and its allies established Operation Southern Watch, instituting a no-fly zone around those areas suffering under Iraqi government oppression to prevent Iraqi aircraft from supporting its military ground operations in violation of the U.N. resolution (Cordesman 1998). Iraq also failed to comply with U.N. Resolution 687 (U.N. Security Council 1991a) which called for monitoring and destruction of Iraq's chemical and biological weapon stockpile (Ibrahim 1993).

With tensions mounting in December 1992, Iraq violated the southern no-fly zone resulting in the shootdown of an Iraqi fighter aircraft. By early January 1993, Iraq moved surface to air missile (SAM) batteries to areas within range of the southern no-fly zone, threatening coalition air patrols (Gordon 1993). In response to these provocations, President Bush ordered an airstrike on the Iraqi SAM batteries, but poor weather over the targets prevented the attack (Wines 1993). By mid-January, with Iraq in continued non-compliance with U.N. resolutions, President Bush made the decision to launch 45 TLAMs against the Zaafraniyah industrial complex south of Baghdad, where it was believed Iraq enriched uranium for its fledgling nuclear weapons program (Brigety II 2007; Sparks 1997). Only eight missiles failed to reach their targets.

⁴⁷ At the conclusion of the Gulf War, the coalition of nations opted not to pursue regime change following the removal of Iraqi troops from Kuwait.

The Tomahawk's characteristics made it uniquely suited for this mission. First, military planners could enjoy a high level of assurance that these missiles would reach their targets, with little collateral damage given the TLAM's accuracy and operational control. Second, the unpiloted TLAM allowed the Bush administration to initiate an armed response to Iraqi transgressions without risking an aircrew in the heavily defended airspace surrounding Baghdad. There was no risk of a downed pilot being leveraged as a political tool as had happened during the Gulf War, especially given the upcoming change in presidential administrations (Sciolino 1991).⁴⁸ Third, because a relatively small number of navy ships can carry as many as 56 TLAMs, each with a 1,000-pound warhead, the strike could deliver 37,000 pounds of ordinance to their targets (Arleigh Burke Class (Aegis) Destroyer n.d.). An equivalent manned strike with bombers would have required overflight permission from Gulf states, multiple suppression of enemy air defense (SEAD) missions, and several attack waves. The Tomahawks, launching from American ships in international waters, avoided such diplomatic complications (Brigety II 2007). The day after the strike, on President Clinton's inauguration day, Saddam Hussein declared a ceasefire as an "expression of goodwill" and agreed to allow previously banned weapon inspectors into Iraq (Fineman and Meisler 1993).

President Clinton entered office in January, 1993, with two pressing international crises already underway, both involving humanitarian disasters. These conflicts assured

⁴⁸ Twenty-two Americans were taken prisoner by the Iraqis over the course of the Persian Gulf War. All but two of these were downed aircrew. These former prisoners of war assert they were tortured and otherwise mistreated at the hands of their Iraqi captors (ABC News Internet Ventures 2006). This mistreatment was documented by the United Nations and the International Committee of the Red Cross and put on display when Iraq presented the captured pilots, faces bruised, in front of cameras to make apparently coerced statements (Sciolino 1991).

that cruise missiles would have utility in his foreign policy. Bosnia had been reeling in genocide since 1992 and the breakup of Yugoslavia. Channeling ancient animosities kept suppressed under communism, Serbian forces under Slobodan Milosevic practiced a genocidal policy of “ethnic cleansing” against local non-Serbs, primarily Muslims (Hendrickson 2002b). A peripheral interest in the wake of the Gulf War, the conflict received little attention from the Bush administration that had been operating under the principals of the “Powell Doctrine.” Named after Chairman of the Joint Chiefs of Staff, General Colin Powell, the Powell Doctrine reflected the anxieties of the Vietnam generation by asserting that when employed, force must be overwhelming. As a peripheral interest, Bosnia did not require this level of response from the United States. But as atrocities mounted, pressure increased throughout the 1992 presidential election and into the early Clinton administration for action against the Serbs. But debate ensued over whether that action should involve American troops (Sobel 1998).

The second conflict at the beginning of President Clinton’s presidency involved a U.N. humanitarian mission to Somalia led, in part, by the United States. Though ultimately a political failure, the Somali experience was instructive, helping to shape future American policy for the use of military force in secondary foreign policy crises. It taught the new president that he must be cautious when committing troops to deal with situations that were of limited concern to national security. The American experience in Somalia began with relatively high public support, but when faced with the deaths of American soldiers in the streets of Mogadishu, the Somali capital, American public support dissolved (Burk 1999). The effort to avert mass Somali starvation under the Bush administration expanded under President Clinton into a peacekeeping and nation-

building venture (Bolton 1994). Divorced from strategic significance, however, Clinton's "assertive multilateralism" assumed combat troops could be effectively deployed to a failing state to perform functions for which they were neither doctrinally nor structurally equipped (Carr 1993).

The result was failure. On 3 October 1993, 12 American soldiers were killed and 78 wounded. The body of an American soldier was dragged through the streets of Mogadishu as a show of factional defiance to the U.N. intervention. The situation forced the Clinton administration to rethink its commitment to the operation (Richburg 1993). Underscoring the confusion over why the United States was so deeply committed, President Clinton asked, "Why are we still there? What are we trying to accomplish? How did a humanitarian mission turn violent? And when will our people come home?" (Clinton 1993b, para. 2) By 1994, facing political pressure, President Clinton removed American troops from Somalia, taking a lesson about the severe political effects of enduring high-profile casualties when using the military for limited, peripheral, non-combat operations.

On the heels of the January cruise missile strike in Iraq, and facing a growing problem in Somalia, foreign policy challenges would test President Clinton almost immediately upon entering office by a bizarre Iraqi plot to assassinate former President Bush on a visit to Kuwait. In April 1993, President Bush embarked on a three-day trip to Kuwait City when Kuwaiti officials arrested 16 would-be assassins equipped with a car bomb and suicide explosives. Two of those arrested were Iraqi nationals. In the ensuing two-month investigation, Kuwaiti and American intelligence officials concluded that Iraq planned and ran the operation through the Iraqi Intelligence Service (IIS) (Clinton

1993a). In response, Clinton ordered IIS headquarters in Baghdad bombed with 23 Tomahawks. The strike occurred in the middle of the night to minimize civilian casualties, yet still sent a powerful message to both Saddam Hussein and his intelligence apparatus. Evoking Article 51 of the U.N. Charter, the strike was framed as an act of national self-defense (Von Drehle and Smith 1993). The cruise missile strike was outside the auspices of the ongoing Operation Southern Watch and was conducted unilaterally to punish Saddam Hussein, deter acts of state-sponsored terrorism, and damage the Iraqi intelligence apparatus (Kempster and Lauter 1993).

President Clinton's decision to unilaterally punish Iraq is salient to the effect of cruise missiles on conflict initiation. First, the United States used force to punish Iraqis when there was little political pressure to do so. Not only was the evidence for an Iraqi assassination plot debatable given the lack of evidence directly linking Saddam Hussein to the conspiracy,⁴⁹ but once the plot was discovered and thwarted, there was no longer an imminent threat to either the United States or its citizens (Brigety II 2007; Weiner 1993). Second, given the time and lack of political pressure, the Clinton administration was free to operate under relatively few constraints, with a consideration of international law, and with a retaliation plan deliberately thoughtful of targeting options that would minimize risk and collateral damage. Colin Powell, the former Chairman of the Joint Chiefs of Staff under President George H.W. Bush and Secretary of State under President George W. Bush, notes Clinton's aversion to casualties in his 1993 autobiography, *My American Journey*.

⁴⁹ After the 2002 invasion of Iraq, a U.S. Joint Forces Command report detailing the findings of an investigation into Iraq's support for terrorism found no IIS documents referring to the plot to kill President Bush (Isikoff 2008; Woods et al. 2006).

“He asked me about Bosnia. Wasn’t there some way, he wanted to know, that we could influence the situation through airpower, something not too punitive? There it was again, the ever-popular solution from the skies, with a good humanist twist; let’s not hurt anybody.” (quoted in Brigety II 2007, 148; C. L. Powell and Persico 2010, 562).

Practically immune to counter-attack, the Tomahawks targeted against the Iraqi Intelligence Service were precise enough to keep collateral damage to a minimum.⁵⁰ The cruise missiles expended in what was labeled Operation Bushwhacker provided the president with the ability to respond almost immediately, without extensive international deliberation, and in a manner that made him look decisive in a crisis (Sparks 1997). This action increased his domestic approval rating ten points, to the highest levels achieved to that point in his presidency (J. Smith and Devroy 1993). Whether or not the strike achieved the desired coercive effect may be irrelevant.⁵¹ The other political advantages gained in the unilateral cruise missile strike outweighed any short-term coercive outcome while reinforcing the precedent for cruise missile use in a small-scale, limited, crisis.

Before the decade was out, the United States attacked Iraq on two more occasions. In September 1996, American warships and bombers launched a total of 44 Tomahawks and CALCMs against Iraqi air defense targets in southern Iraq. Operation Desert Strike was in response to an Iraqi military incursion against the Kurdish people of northern Iraq, a violation of U.N. mandates (Sparks 1997). Prior to the attack, the United States threatened Iraq with a display of force by putting its forces in the region at a higher state of readiness, but this was not enough to coerce the desired changes in Iraqi

⁵⁰ The attacks took place at night, at a time when it was estimated any civilians working in the area would be absent.

⁵¹ Although the ISS headquarters was badly damaged, neither it nor the intelligence service were “crippled” as had been initially reported by the Clinton administration (P. Clark 1993). Consequently, the long term coercive effects are debatable.

behavior. Cruise missile strikes soon followed. Although an effort to punish Saddam Hussein while also expanding the still in-place no-fly zone, the strike was more of a way to send a coercive political message to Iraq and to deterring further incursions into Kurdistan, with minimum bloodshed and military commitment. Then Secretary of Defense William Perry, speaking at a Pentagon news briefing, highlighted the desire to deter Iraqi aggression while limiting American involvement in Iraq's internal affairs,

Now Saddam Hussein has demonstrated once more his willingness to use military power recklessly. And we must demonstrate once more our willingness and capability to check that power and deter Saddam Hussein from being the regional bully... The plan does not involve the United States in the conflict under way in Iraq. But it does make Saddam Hussein pay a price for his aggression (Pentagon news briefing on U.S. missile strike against Iraq 1996).

The third cruise missile strike on Iraq, Operation Desert Fox, began in December 1998. The cruise missile strike was part of a larger multi-day air operation in response to continued non-compliance with U.N. weapons inspections. In the waning months of 1997, Iraq continued to violate no-fly zones, which allied warplanes actively patrolled, ultimately threatening to shoot down an American U-2 spy plane. The United States and the United Kingdom responded with threats of military action and a build-up of military forces through the early months of 1998. According to President Clinton, the purpose of the raid, one of the largest of his presidency, was to, "degrade Saddam's capacity to develop and deliver weapons of mass destruction, and to degrade his ability to threaten his neighbors." (quoted in Newman et al. 1998, para. 4) Politically, the United States intended for the attack to punish Iraq for its non-compliance with U.N. mandates and weaken Saddam Hussein's sources of political power, namely his elite Republican Guard forces and the weapon programs Saddam Hussein brandished to maintain regional

prestige (Roberts 1999). However, unlike the Gulf War, where the United States enjoyed the support of 28 allies, this mission had only one ally, the United Kingdom, who capitalized on the opportunity to employ their own Tomahawks in combat (Elliott et al. 1998; Newman et al. 1998).⁵²

Part of a greater military effort lasting several days, the cruise missiles used in this strike were more than a coercive tool. In Operation Desert Fox, cruise missiles ensured manned attack aircraft could accomplish their missions by clearing enemy air defenses that would have otherwise required many more SEAD missions. Additional missions would have greatly extended the duration of the limited campaign and increased the risk to American and British pilots. In this supporting role, the cruise missiles were an invaluable tool to keep the overall duration and commitment to the minimum required for political purposes.

Iraq in the 1990s was a testbed for the concept of cruise missiles as a weapon of coercive diplomacy. The ability to strike targets deep in Iraq – at will – shows how cruise missile are different from more traditional weapons such as manned bombers and ground forces. Their stealth, precision, and capacity to reduce or eliminate risks to American military lives by either directly attacking targets, or supporting a wider effort by eliminating defense systems, made them a go-to weapon for dealing with the Iraqi regime. By the time of Operation Desert Fox, the Tomahawk cruise missile, now more accurate with the full integration of satellite navigation, provided long distance weapon

⁵² Clinton's critics argued the lack of international support was due, at least in part, to the perception that the raid was a ploy to divert attention away from the president's growing domestic scandals and impeachment trial (Hendrickson 2002a; O. R. Holsti 2011; Reitman 1999).

accuracy not seen before. In the end, attacking Iraq with cruise missiles in the 1990s appears to have been effective (Byman 2000). Iraq was largely contained and American policy generally achieved its objectives. When Iraq did transgress, cruise missile strikes ultimately forced Saddam Hussein to walk back his policies (Woods et al. 2006).

Iraq would not be the only target of American cruise missiles in the 1990s. The weapons would also be expended, albeit to a limited extent, in the Bosnian conflict, and to a greater extent in the Serbian conflict as part of a greater international military effort. However, there is another case where the United States initiated armed force against an adversary exclusively using cruise missiles. This time, the adversary was not a state, but a transnational terrorist organization.

Non-State Actors

In August 1998, the international terrorist organization, Al Qaida, detonated two bombs near American embassies in Kenya and Tanzania, killing 252 people including 12 United States citizens. In little more than a week, forensic teams determined the Al Qaida organization was responsible, and that the mastermind behind the attack was Osama Bin Laden (Hendrickson 2002b; National Security Council and Records Management Office 1998). In retaliation, and to dissuade further attacks, President Clinton ordered a massive cruise missile strike from four Navy warships and one submarine. The attack, Operation Infinite Reach, was designed to send the message that American military power had unlimited reach and sufficient resources to strike terrorist networks (Newsweek Staff 1998).

The United States Navy targeted the 79 cruise missiles against Al Qaida training camps in Afghanistan and a suspected chemical weapons plant in El-Shifa, Sudan. As in other cruise missile strikes, President Clinton's goal was to minimize collateral damage using precision weapons, selectively target terrorist centers of gravity, and avoid civilian casualties by carefully controlling the timing of the attacks (National Security Council and Records Management Office 1998; Zenko 2010).

The attack against terrorist targets in response to the embassy bombings was the first time a state initiated a significant military response against a terrorist organization while at the same time punishing a non-state actor for a terrorist act and deterring future attacks. Additionally, it marked not only the American entry into what would later become the global war on terrorism, but the first time the United States simultaneously initiated force against two countries, neither of which it was at war with. (Zenko 2010). Perhaps the only analogous event in American history was President Ronald Reagan's 1986 attack on Libya, using F-111 fighter-bomber aircraft, to punish Libyan leader Muammar Gaddafi for supporting a terrorist attack on a nightclub in Germany (Hendrickson 2002b). However, unlike the Libyan strike, the bombings in Afghanistan and Sudan were not designed to punish a state leader for supporting terrorism, but punish the terrorist organization itself. As a secondary objective, the United States hoped the cruise missile attack in Afghanistan would kill the embassy bombing mastermind and Al Qaida leader, Osama Bin Laden.⁵³ Not only were the attacks targeted toward the resources and infrastructure of a non-state actor, but they were accomplished without

⁵³ Osama Bin Laden escaped the attacks unharmed. Expecting retaliation for the embassy bombings, Bin Laden fled his compound in Kandahar, Afghanistan, seeking refuge in the capital city of Kabul (Zenko 2010)

invading the sovereign soil of another state. Cruise missiles again proved to be the perfect weapon for such an attack.

The attack on a non-state actor in retaliation for a terrorist attack represented a policy shift for the United States (Perl 1998). President Clinton approached the terrorist threat in four ways. According to Hendrickson (2002b), the Clinton Administration's policy efforts focused on, "providing 'no concessions' to terrorists; bringing to justice those who support or conduct terrorist activities; working to 'isolate' and 'change the behavior' of terrorists; and working with other countries to advance their counterterrorist efforts." (101) The Afghan and Sudanese strikes marked the first time the United States had publicly announced the purpose of the strike as being preemptive in nature against a terrorist organization; striking multiple sites within a state that is not conclusively to blame for the original attack. The primary goal was to strike non-governmental organizational infrastructure instead of a single individual aside from Bin Laden. Hence, the cruise missile strike enabled the Clinton administration to shift from anti-terrorist policies to a more global, proactive, militaristic, and unilateral posture (Perl 1998).⁵⁴

In the years following the attacks, Al Qaida continued, and even expanded, its terrorist operations. The strikes in Afghanistan and Sudan later constituted a rallying cry for Al Qaida and a primary recruitment tool (Wright 496AD). In this respect, Operation

⁵⁴ Operation Infinite Reach was not without its detractors and was of questionable success. First, critics accused the president of using the strikes as a diversion from his foremost domestic problem, impending impeachment. However, experts later found no connection between Operation Infinite Reach and Clinton's domestic political concerns. The 9/11 Commission, investigating the Al Qaida attacks on the World Trade Center in 2001, would come to the conclusion that the key justification for the U.S. attacks in 1998 was indeed the demonstration of resolve in the face of terrorism (The National Commission on Terrorist Attacks Upon the United States 2014; Zenko 2010).

Infinite reach may be considered a strategic failure, but the operation demonstrated that states could use cruise missiles, with little protest from the international community, to strike non-state actors within sovereign states. However, it also revealed that while cruise missiles can provide a military option for dealing with terrorism, the targets they strike are only as good as the intelligence that uncovers them and the speed of the decision cycle that orders the attack.

The day before the terrorist attacks on September 11, 2001, in an interview in with Australian businesspeople, President Clinton claimed that he had another opportunity to kill Bin Laden shortly after Operation Infinite Reach. However, because the Al-Qaida leader was operating out of urban Kandahar, Afghanistan, even cruise missiles may have delivered unacceptable collateral damage (J. Miller 2014). This offhand comment illuminates two important points for this discussion. First, there was clearly a temptation to direct cruise missiles to kill Bin Laden, but because the expected collateral damage was expected to be too large, even with precision weapons, the strike was called off. Second, it shows how reliant the administration had become on using cruise missiles for these sorts of missions. When the administration determined a cruise missile strike was not feasible, they considered no other military alternative suitable.

Conclusion

The debut of Tomahawk cruise missiles in the 1991 Persian Gulf War ushered in a new era in the application of precision airpower. No longer was affecting the adversary's means to make war relegated to massive bombing campaigns and nuclear weapons (Olsen 2010), arguably an ineffective and inefficient means of exercising

coercion (Pape 1996). Instead, key parts of a state's political, economic, and military infrastructure could be selectively cut off in a way that reduced the risk to civilian populations and military personnel, using land attack cruise missiles. Because using force to coerce an adversary into complying with a state's demands no longer risked a large-scale confrontation, the United States in the 1990s was free to use cruise missiles to coerce and punish its adversaries in situations in which force may have been less desirable than diplomacy. The possession of technologically sophisticated cruise missiles increased the likelihood the United States would initiate militarized interstate disputes. These missiles provided a qualitatively different capability than many believed to be available prior to 1991 when cruise missiles were relegated to either nuclear or unsophisticated anti-ship missions. But the lesson was not limited to the 1990s, the United States continues to rely on cruise missiles to boost coercive foreign policies.

The Clinton Administration was not the only administration to discover the benefits offered by using cruise missiles to pursue national security goals. President George W. Bush launched Tomahawks in the first salvos of the 2003 Iraq War to eliminate Saddam Hussein in a government decapitation move, with the goal of bringing an early end to the conflict (Cole 2017; Pape 1996). Though decapitation was unsuccessful, Tomahawks were effective in paralyzing key elements of Iraqi command and control networks, ensuring a speedy Iraqi military collapse. President Barack Obama favored cruise missiles in his first strikes against the so-called Islamic State in Syria, showing the cruise missile's versatile utility as a coercive weapon for attacking a non-state enemy within a conflict in which the initiating state does not wish to become entangled. President Donald Trump directed cruise missiles attacks twice within the first

two years of his presidency to show resolve against Syria by striking a Syrian airbase and industrial facilities as punishment for alleged Syrian chemical weapon attacks against civilians. The strike was meant to send a message to the government of Syria to deter further attacks and compel Syria to again give up chemical weapons.⁵⁵ In many ways, the Syrian strikes were an extension of President Barack Obama's threat to attack Syria should they continue to carry out chemical attacks against their own people. Yet the strike neither committed the United States to a larger conflict with Syria nor drew the international condemnation otherwise expected from initiating unilateral violence against a sovereign state.

The case of American missile diplomacy in the 1990s demonstrates how public opinion, domestic political pressure, and advanced weapon technology can culminate into an increased likelihood that military force will be employed to deal with national security challenges. Since the Vietnam War, the American public has come to expect that when the United States uses military force, military and civilian leaders will endeavor to minimize military casualties and civilian collateral damage. Research suggests that as a conflict ages, Americans become less sensitive to small losses (J. E. Mueller 1973). Cruise missiles provide the president with the ability to bypass losses at the beginning of a conflict by minimizing military and civilian casualties. Additionally, by using cruise missiles as the primary means to initiate increasingly common discrete military operations, the United States discovered in the 1990s that not only can collateral damage

⁵⁵ In 2014, the U.S., working with Russia, a Syrian ally, undertook a multilateral effort to destroy Syria's chemical weapons. Though Syria voluntarily agreed to cooperate, it was later discovered that enough chemical weapons remained to mount further strikes (Shane 2017).

be moderated, but military commitment is reduced by limiting the cost and resources invested in the operation (Zenko 2010). Furthermore, by avoiding the long-term commitment otherwise associated with military action, there is more freedom to initiate conflict to divert attention from domestic political challenges.

President Clinton discovered, whether intentionally or not, that when he ordered a military strike to punish international pariahs for their transgressions, he enjoyed measurable increases in national satisfaction polls. These political benefits were the byproduct of nearly 60 years of domestic cruise missile technological development and the revolution in military affairs. It was not until cruise missiles could be relied upon to deliver a payload to a target quickly, reliably, and accurately that they would begin to have political and coercive value that, in some cases, surpasses and even replaces that of manned military operations.

This case study exposes a clear trend. In a post-Cold War world where limited military strikes against adversaries have become more acceptable internationally and domestically, cruise missiles provide a state with the attractive ability to employ limited force to both increase domestic and international legitimacy while demonstrating international resolve. Hence, the threshold for military force initiation lowers when a state is in possession of cruise missiles.

CHAPTER SIX: CONCLUSIONS

This dissertation provided the first systematic empirical test of the cruise missile's influence on state behavior. My goal was to empirically determine whether states who possess cruise missiles have a greater likelihood of initiating military force against their adversaries. I answered this question using a mixed methods research design to test the three hypotheses listed in Figure 6.1. The research began with data collection and a series of statistical quantitative analyses based on original data collected on cruise missile possession. I followed this phase of research with two qualitative case studies to illustrate the quantitative results. A systematic examination of the data revealed that states with cruise missiles are, using multiple measures of conflict initiation, more than twice as likely to initiate military force than states that do not possess cruise missiles. In addition, cruise missile-armed states are more likely to use threats and displays of force to coerce their adversaries. Each of these effects appears to be independent of regime type. Case studies selected using predictive values from the quantitative analysis supported these findings. In the case of both the 1982 Falkland Conflict and American use of cruise missile "diplomacy" in the 1990s, the qualitatively unique capabilities provided by cruise missiles appeared to increase the likelihood Argentina and the United States, respectively, would initiate military force as a means of coercion.

This concluding chapter serves two purposes. First, it appraises the purpose and procedures entailed in this research effort. I revisit the methodological procedures used to answer the primary research question: Do cruise missiles change state behavior by increasing the probability a state will use military force to achieve its foreign policy objectives? After revisiting the methodology, I briefly examine each chapter's main

points, focusing on the empirical chapter's conclusions. Then, I offer a final assessment of how this research contributes to the force initiation and cruise missile literatures. In sum, it contributes to the force initiation literature by adding an empirical assessment of a weapon's effect on whether a state uses armed force. It also contributes to the small, but important, cruise missile literature by providing the first systematic investigation into whether these weapons provide a threat beyond their well-catalogued capabilities.

Figure 6. 1 Summary of Research Question and Hypotheses

<i>Research Question</i>	Do cruise missiles change state behavior by increasing the probability a state will use military force to achieve its foreign policy objectives?
<i>Hypothesis 1</i>	States armed with cruise missiles are more likely than states without cruise missiles to initiate military force.
<i>Hypothesis 2</i>	States armed with cruise missiles are more likely to initiate crises through threats and displays of force than states that do not have cruise missiles.
<i>Hypothesis 3</i>	There is no difference between the probabilities that democratic or autocratic states with cruise missiles will use military power to achieve foreign policy objectives.

The second purpose of the chapter is to evaluate the research and perform a final integration of the quantitative and qualitative strands of research. I systematically assess each hypothesis based on quantitative empirical evidence as illustrated by the qualitative case studies. Using a weaving approach, I bring together each strand of the quantitative and qualitative research to make a final determination as to whether the evidence provides enough support to accept or reject each hypothesis. After completing this phase of the explanatory sequential mixed methods design, I turn to the implications of my

findings. Finally, I revisit the dissertation's limitations and suggest areas for future research.

Procedures and Summary of Main Points

Though the research question could have simply been answered using a relatively straightforward quantitative design, by using a mixed method approach I was able to probe the question more deeply than would have otherwise been possible. Mixed method designs have the advantage of using each strand of research, quantitative and qualitative, to mutually support the conclusions of the opposite strand and using one or the other strand to identify cases or data for further systematic and deliberate study (Creswell 2008; Johnson and Onwuegbuzie 2004; Plano Clark and Ivankova 2015). The type of mixed methods research I used here was the explanatory sequential mixed method design which employed quantitative analysis to empirically test the hypotheses and identify cases for further qualitative analysis (Fetters, Curry, and Creswell 2013; Igo, Kiewra, and Bruning 2008; Ivankova, Creswell, and Stick 2006; Lieberman 2005; Seawright and Gerring 2008). In this chapter, I weave together a final evaluation of the results from each of these two strands.

The research design consists of three phases that unfold over the course of each chapter. To lay a foundation, I began this research with a review of the literature in Chapter Two. First, I appraised the common correlates to the use of force. The literature relating to the initiation of military force by one state to another centers around seven main themes: regime type and age, state wealth, alliances, territorial contiguity, revisionism, and the role played by arms transfers and individual weapons. We saw that

although significant debate exists in the literature, these characteristics, individual and nuanced to each state, play a significant role in the likelihood a state may use armed force. For example, states that share a border may also compete for resources and territory, increasing the odds they may come into conflict (Bremer 1992; Diehl 1985; Hensel 2000; Hill 1945; Joyce and Braithwaite 2013; Luard 1986; Vasquez 1993, 1995, 2009; Vasquez and Henahan 2001; Wallensteen 1981). Furthermore, in a parallel to this research, we see empirical evidence that states armed with ballistic missiles are 266 percent more likely to initiate a crisis (Mettler and Reiter 2013).

In addition to the force initiation literature, I examined the small body of literature that deals specifically with cruise missiles. The cruise missile's place in history dates to World War I. The literature indicates that little attention was paid to the missile's potential until the mid-1970s. It was then that advancements in technology and capability forced scholars and policy makers to reexamine their earlier assessments of its place within security constructs. As the technology progressed, we see that cruise missiles became more accessible, leading to a "contagion" of cruise missile proliferation (Gormley 2008b). These bodies of literature, aligning with the primary dependent and independent variables, contribute to our understanding of both the factors that correlate with force initiation and the dangers posed by cruise missiles. This dissertation built on each by connecting cruise missiles to force initiation with a systematic empirical test of the missile's role in interstate disputes and conflict.

Beyond a literature review, Chapter Two also presented a theory to explain why cruise missiles may increase the likelihood of military force initiation between states. Using coercion theory as a framework, I argued that cruise missiles provide a variety of

coercive mechanisms to the state at a lower cost than can be delivered by manned airpower alone. These coercive mechanisms include direct pressure, denial, weakening, and political destabilization (Byman and Waxman 2002). Furthermore, the cruise missile may make the use of force more attractive to the initiating state when used to signal resolve and capability to both the adversarial state and the domestic audience. In the face of sunken costs, using cruise missiles may sidestep potential quagmires associated with troop deployment and other large-scale operations requiring costly mobilizations and potential for the loss of life. Finally, Chapter Two presented three hypotheses grounded in the existing literature, and framed by coercion theory. First, I proposed that states armed with cruise missiles are more likely to exercise military force than states that do not have cruise missiles. Second, I posited that cruise missile-armed states are more likely to initiate crisis through threats and displays of force. Third, I proposed that the use of cruise missiles as coercive tools does not vary by regime type. Rather, democracies and autocracies, armed with cruise missiles, are equally likely to initiate armed force in pursuit of their foreign policy objectives.

Having assessed the relevant literature and presented a theory to explain the correlation between cruise missiles and the probability of using military force, I turned to the first phase of the explanatory sequential mixed method design, the collection and analysis of quantitative data. In a mixed methods project such as this, it is common for one of the strands to have priority, or be the primary focus of evidence to support the hypotheses (Creswell 2008). For this project, the quantitative strand was the research focus as it provided the empirical evidence to test the hypotheses, a means to select case studies, and a method to generalize the findings to the universe of possible cases.

The data set I used to test the three hypotheses relied on four primary sources. First, I coded for my primary independent variable, cruise missile possession, using original data on cruise missile acquisition by year. I accomplished this by querying the Stockholm International Peace Research Institute (SIPRI) Arms Transfers Database (SIPRI 2015) for cruise missile arms transfers during the period in question. Then, I validated this information, and coded for indigenous cruise missile programs not captured in the SIPRI database, using information provided by the National Defense Intelligence Agency (Systems 1999), Kueter and Kleinberg (2007), and Werrell (1985). Next, I coded for the primary dependent variable, military force initiation, using two common conflict data sets, the International Crisis Behavior (ICB) data set (Brecher et al. 2016) and the Correlates of War Project's (CoW) Militarized Interstate Dispute (MID) data set (Palmer et al. 2015). However, since the ICB data set is not dyadic, I used Mettler and Reiter's (2013) coding of initiators and targets. Finally, to test for whether democracies or autocracies with cruise missiles have different likelihoods of initiating force, I used Cheibub, Gandhi, and Vreeland's (2009) measurement of regime type based on public accountability in the Democracy and Dictatorship data set to produce an independent variable that is observational, reproducible, and possesses identifiable coding properties. To control for joint democratic dyads in the general force initiation model, I used data derived from the Polity 4 Project (Marshall, Gurr, and Jaggers 2016).

After completing the quantitative data collection, I proceeded to analyze the data using descriptive statistics, logit, probit, and fixed-effects models. I found strong evidence to suggest that states armed with cruise missiles are more likely to threaten, display, and initiate military force than states who do not possess cruise missiles.

Furthermore, this likelihood appears to be independent of regime type as both democracies and autocracies appear to be equally likely to initiate conflict when armed with cruise missiles. Though I will go into more detail below, I must note that the primary threat to validity over the course of the quantitative analysis was the threat of selection bias due to endogeneity. Endogeneity may occur in this sample if cruise missile acquisition is not randomly assigned, allowing states to self-select into the treatment sample. To control for bias, I endogenized cruise missile acquisition using a three-equation multivariate probit model to account for cruise missile procurement for both the initiating and target state. Once I controlled for selection effects, I predicted the chances the initiating state would issue a challenge. Even having controlled for endogeneity, the evidence strongly supports my hypothesis throughout Chapter Three.

The second phase of the mixed methods design begins in Chapter Four with the first of two illustrative case studies. In this chapter I examined the 1982 Falkland Conflict, a crisis in which cruise missiles played no small part in the hostilities between Argentina and the United Kingdom. Like the second case study in Chapter Five, I selected this case study by using predicted values from the statistical models employed in Chapter Three, isolating cases where the model predicted with a relatively high probability that a state with cruise missiles would likely initiate militarized disputes.

Chapter Four's central argument was that misperceptions on each side of the Falkland Conflict increased the likelihood Argentina would abandon 150 years' worth of peaceful negotiations and occupy the islands by force. On the Argentine side, the government perceived that the British were losing interest in the region and simply needed the right conditions to abandon their claims. On the British side of the equation,

the erroneous assessment that Argentina's air-launched cruise missiles (in this case, French-made Exocet anti-ship cruise missile) were not operational helped lead to the hasty decision to send a fleet to take back the islands. However, the sinking of British ships by Argentine Exocets forced the British Navy to reassess and alter their strategy, though not to the point of complete withdrawal. Instead, with countermeasures in place, the British Navy simply moved beyond the range of Argentine aircraft. In the end, though the small number of Argentine cruise missiles accounted for the most significant damage on the British force, they were too few to drive back the major power's response to Argentine aggression.

In Chapter Five, I continued my illustrative case analysis with an examination of the American use of cruise missiles during the 1990s. Popularly referred to as "cruise missile diplomacy," this case contrasts with the first case study by occurring after the use of precision land attack cruise missile technology in the 1991 Persian Gulf War which demonstrated the cruise missile's use as a tool for coercive punishment rather than defensive denial. After the success of the Tomahawk cruise missile in the Gulf War, the United States found that coercive military force could be used when faced with foreign policy crises in which the employment of more overt and resource intensive military solutions (like troops or manned aircraft) were not considered practical.

Cruise missiles satisfied three needs for American decision makers. First, by reducing the risk to military personnel, cruise missiles permitted the use of military force in a more agreeable context to domestic audiences who had grown increasingly weary of military casualties. Second, using cruise missiles to punish adversarial behavior avoided the commitments associated with greater military operations such as mobilization and

troop deployments. By launching from ships off the coast, the United States no longer required the long logistical tail and basing agreements that plagued earlier military adventures. Third, cruise missiles provided a low cost means to lend credibility to American military threats abroad. When challenged by state or non-state actors, the United States found a way to respond militarily against entities in sovereign countries with little notice and with precision, lowering the risk of collateral damage.

Having considered the procedures and main points of the dissertation thus far, I now proceed to weave together the first two strands of research. I accomplish this final phase of the research by further integrating the quantitative and qualitative phases through a discussion and analysis of each hypothesis as observed through the lenses of each strand. This discussion demonstrates that each phase is not only mutually supportive, but extends the discussion of the thesis by bringing the empirical evidence provided through statistical analysis to life with the rich description provided by the illustrative case studies.

Quantitative and Qualitative Strand Integration

Looking beyond this dissertation's methodological procedures and main points of each chapter, I turn to the third and final phase of the explanatory sequential mixed methods design. I accomplish the integration of the quantitative and qualitative phases of this research through narrative weaving. Feters, Curry, and Creswell (2013) describe the narrative weaving approach as a technique that, "involves writing both qualitative and quantitative findings together on a theme-by-theme or concept-by-concept basis." (2142) Here, I use each hypothesis as a central theme. I follow each hypothesis with the

empirical results that support the hypothesis's validity as well as the illustrative examples from the two case studies, as applicable. By approaching the analysis in this way, it is easier to discern how each strand interacts and influences the interpretation of the other. In short, this discussion constitutes a second touchpoint for the quantitative and qualitative phases of this research, the first touchpoint being the use of the statistical analysis to aid in the selection of the case studies (Ivankova, Creswell, and Stick 2006). But, before diving into this analysis, I first evaluate whether this endeavor answered the research question and if validity issues taint the results.

This dissertation began with a simple question: Do cruise missiles change state behavior by increasing the probability a state will use military force to achieve its foreign policy objectives? Specifically, this research asked if states armed with cruise missiles are more likely to initiate armed conflict than states who do not possess cruise missiles? I argued that cruise missiles reduce the need to commit combat troops and increase capability in coercive situations calling for an exemplary use of force, increasing the odds a state will initiate a limited military use of force at levels short of war. The empirical evidence suggests that when states acquire cruise missiles, they become more likely to initiate military force.

Validity

No research project, no matter how well done, can be entirely conclusive. The greatest threat to a project's conclusions comes in the form of research validity, or the accuracy and/or correctness of the research's methodology and procedures. Threats to validity may come in four general forms. Measurement validity questions whether the data and variables used accurately represent the behavior in question. In this dissertation,

the primary independent variable was the possession of cruise missiles. I defined cruise missiles using Betts's (1981) oft-cited description that depicts cruise missiles as, "unmanned, expendable, armed, aerodynamic air breathing, and autonomous vehicle[s]." (31) This standard definition includes both anti-ship and land attack cruise missiles. The primary dependent variable, the use of military force, is operationalized two ways. First, I coded challenges from the ICB data set, capturing crisis and military hostility. Second, I coded initiations of force from the MID data set to capture the use of military force short of war. By applying two measurements for military force, I added robustness to the results by capturing the different measurements used in these two common data sets. To code for threats and displays of force I used standard MID data set measurements. For regime type, I use dichotomous independent variable for democracy produced by Cheibub, Gandhi, and Vreeland (2009, 2010) and control variables to account for joint democratic dyads using data derived from the Polity 4 data set (Marshall, Gurr, and Jaggers 2016).

The second threat to validity is external. External validity is concerned with the extent that the research's results can be generalized to other cases and situations. Typically, and as is the case here, case studies suffer from poor external validity. Each case consists of its own contextual variables that make generalizability a challenge. Hence, the case studies included in this effort are for the purposes of explanation only, they are not prescriptive nor do they purport that cruise missiles interact with the state in the same way each time to increase the likelihood of conflict. Instead, they are a *post-hoc* effort to show how cruise missiles affected state behavior in the past, information not available through statistical analysis alone. In contrast, quantitative analysis generally

enjoys external validity, however threats to validity still require controls. Here, to control for selection effects due to the non-random assignment of cruise missiles to the population, I endogenized the states' cruise missile procurement using a three-equation multivariate probit model. First, I predicted cruise missile acquisition (for potential initiators and for potential targets), then I predicted MID or ICB initiation. Additionally, by using data sets that include the entire universe of possible cases, I ensured that the data sample matches the target population as closely as possible for this type of research. Where small numbers of observations existed, as in the case of regressions involving land attack cruise missiles only, I used a penalized maximum likelihood logistic regression to account for potential bias due to the limited number of cruise missile states as compared to the greater number of MID initiations

A third threat to validity is internal. Internal validity affects the causal interpretability of the findings. For this dissertation I ensured internal validity in several ways. First, I based the values for the independent variable, cruise missile possession, on the year of initial acquisition, lagged one year in the statistical calculations to account for temporal antecedence to ensure I tested for the cruise missile's influence on conflict and not conflict's influence on the acquisition of cruise missiles. Additionally, to control for cross-unit heterogeneity, I used a fixed-effects model to control for all stable characteristics not otherwise measured using control variables. To test for covariance, I performed multicollinearity tests using correlation matrices to ensure that the control variables used were not subverting the variables of interest.

The final validity concern involves statistical conclusion validity. Statistical conclusion validity is a determination of whether the reported results reach the correct

conclusion as to the relationship between the variables and the responses under examination. In this dissertation, I used proper statistical techniques, common to this type of research, that carry enough statistical power to correctly reject, or accept, the null hypotheses as applicable. I used robustness checks to ensure my chosen tests were not violating statistical assumptions. Finally, heterogeneity was addressed, as noted, using fixed-effects as recommended by the Hausman Specification Test (Hausman 1978).

Discussion

Having addressed validity concerns, I now turn to the results of the quantitative and qualitative findings. The quantitative portion consisted of 1.1 million dyad-years spanning 1946, the year that marks the beginning of the modern era of cruise missiles, to 2007, the year data across the included data sets was available. Over these years, I observed 378 ICB challenges and 2,742 MID initiations. States possessed cruise missiles in 28 percent of the total observations. Overall, there were 78 states in the sample that possessed cruise missiles during the period under study.

Hypothesis 1: States armed with cruise missiles are more likely than states without cruise missiles to initiate military force.

As hypothesized, the quantitative statistical analysis to test the first hypothesis shows that states armed with cruise missiles are more likely to use military force than states that do not have cruise missiles. Specifically, these cruise missile-armed states are significantly more likely to initiate an ICB challenge or MID initiation. States possessing cruise missile initiate conflict at a rate 2.8 times that of non-cruise missile states for ICB challenges. Using logit, probit and fixed effects models, I found a significant and positive relationship between cruise missile possession and ICB challenges. Logit odds

ratios suggested that states with cruise missiles have 2.42 times greater odds of initiating an ICB challenge than states that do not possess cruise missiles. A marginal effects analysis showed us that the predicted probability that a state will initiate an ICB challenge increases 2.5 times after acquiring cruise missiles from a .02 percent probability to .05 percent probability.

I replicated my analysis of ICB challenges by swapping the ICB challenge independent variable with the MID initiation variable. Again, the findings as they relate to Hypothesis 1 also supported the proposition that states armed with cruise missiles are more likely to initiate military force than their non-cruise missile armed counterparts. States possessing cruise missiles initiate disputes at a rate 2.8 times that of non-cruise missile states for MID initiations. Results from fixed effects logit regression analysis found positive and significant correlations between cruise missile possession and MID initiation. States armed with cruise missiles are 2.49 times more likely to initiate a MID. Additionally, a marginal effects analysis told us that the predicted probability of a MID initiation before a state acquires cruise missiles is .2 percent, but that probability increases to .4 percent after acquisition.

The case studies supported these outcomes, contributing to the validity of Hypothesis 1. In Chapter Four, I examined the role of air-launched Exocet anti-ship cruise missiles in the 1982 Falklands Conflict. This case study demonstrated how the Argentine procurement of air-launched Exocet anti-ship cruise missile increased the likelihood that Argentina would abandon 150 years of peaceful negotiation over the sovereign disposition of the Falkland Islands and attempt to take the islands by force.

The increased prospect of using force can be inferred by Argentina's actions following the acquisition of air-launched Exocet cruise missiles in the late 1970s.

The timing, purchase, and deployment of French-made Exocet missiles is significant. Prior to the Falkland Conflict, the only noteworthy use of cruise missiles was the Egyptian sinking of the INS Eilat in 1967. When the small Egyptian gunboat was able to sink an Israeli destroyer with a single Soviet-made P-15 Termit anti-ship cruise missile, states with arguably inferior naval power took note. The lesson to be taken from the INS Eilat was that cruise missiles could mitigate asymmetrical military advantages at sea (Associated Press 1987; Farenkopf 2016). The 1970s saw an increased demand in the more sophisticated Exocet missile, including 10 air-launched versions to Argentina. By 1982, Argentina had five missiles which became fully operational only a few months prior to the invasion as the military pressured French assistance teams to resolve final technical problems.

The British appeared to have been unaware of the Exocet's operational status prior to sending a task force in response to the invasion. But when hostilities commenced, the British petitioned NATO allies, including France, to embargo further arms shipments to Argentina (Eddy, Linklater, and Gillman 1982). Thus, Argentina was unable to receive the additional five Exocets they expected from the French that would have likely forced the British from the field should in the face of additional ships sunk (Woodward 1992). Regardless, the rapid shift in military power provided by the small number of Exocets, combined with private knowledge about intention and capability on each side, increased the likelihood of conflict by increasing the perceived possibility of Argentine

success through greater anti-access/area-denial capabilities that would have otherwise ensured a deterrent against an otherwise unlikely British response.

The missile diplomacy used by the United States in the 1990s, as presented in Chapter Five, also provides an illustrative example of how cruise missiles increase the probability of using force in coercive situations. Following the success of the Tomahawk land attack cruise missile in the 1991 Persian Gulf War, the United States surmised that this was a weapon capable of coercing adversaries at a low physical and political cost. When faced with foreign policy challenges requiring limited, yet decisive, responses, as was often the case in the 1990s, the United States found that it was able to respond militarily without mobilizing troops or committing to full-scale engagements. Instead, the United States could add credibility to threats and punish undesirable adversarial action by selectively bombarding key elements of a state or organization's political, economic, or logistical infrastructure. With cruise missiles, this military action could be done in a way that reduced the risk to both friendly military personnel and target state civilians, making the use of force more palatable to domestic audiences. Hence, in situations such as the alleged plot to assassinate former President George H.W. Bush and the attack on American embassies abroad, a firm, but limited, military response could be initiated quickly and effectively as a means of coercive punishment. By nearly eliminating the long-term commitment and risk otherwise associated with military force, the United States had more flexibility to escalate a coercive foreign policy abroad. Cruise missiles effectively lowered the threshold for initiating military force by providing an attractive option to use force to signal resolve while maintaining or increasing domestic and international legitimacy.

Hypothesis 2: States armed with cruise missiles are more likely to initiate crises through threats and displays of force than states that do not have cruise missiles.

As hypothesized, states armed with cruise missiles are more likely to initiate crises through threats and displays of force than states that do not have cruise missiles. In Chapter Three, I used a multinomial logistic regression to reference levels of hostility in the MID data set against a base level of no militarized action to test a state's preference to use threats or displays of force instead of no militarized action, given their dichotomous possession of cruise missiles. Unlike the previous hypothesis, I did not replicate my results with ICB data as that data set had no comparable measurement to the MID data set's hostility level variable. This analysis found that cruise missile possession is positively and significantly correlated with using threats or displays of force. Additionally, the analysis confirmed the previous findings that there is a positive and significant correlation with the use of force. Using relative risk ratios to interpret the base conclusions, I found that states armed with cruise missiles are at a 231 percent greater risk of using threats and 260 percent greater risk of displaying force. Interestingly, the risk of using force or going to war is nearly two times higher when the state possesses cruise missiles.

The case studies in Chapters Four and Five illustrate the results of quantitative testing. First, in the Falkland Conflict case study I observed that the planned removal of a British naval presence in the South Atlantic combined with secret British overtures to the Argentine government for the eventual relinquishing of sovereignty, signaling a desire to withdraw from the South Atlantic. Given this apparent signaling, and a belief that the British would not likely respond to an obvert occupation with military force, the

Argentines probed British resolve with a small incursion on nearby South Georgia Island. When this crisis was met with diplomatic protest and the small diversion of a handful of British ships and Marines to the area, the Argentines were alarmed, but not deterred from taking escalatory steps to move beyond this display of force. Rather, British objections reinforced a need to act soon, if action were to be taken at all. In fact, had Argentina waited another year, the United Kingdom's response would have been much more difficult to muster. Their only two aircraft carriers were to be sold to Australia, and at the time of the invasion the Royal Navy was mostly home for the Easter holiday rather than dispersed globally. This lack of basic strategic foresight indicates that Argentina believed the United Kingdom would not mount a significant military response, despite the British reaction to the initial show of force on South Georgia Island.

Chapter Five captured nearly a decade of aggressive behavior by the United States, some of which included threats and display of force in the form of changes in regional force readiness or repositioning of naval vessels. To manage this wide scope, I noted two prominent uses of threats and displays of force in this case study (Palmer et al. 2015). Each time, the United States intended these actions to coerce a change in adversarial behavior (i.e. Iraq). The United States generally followed up these threats and displays of force with actual force to bend Iraq's will. First, in 1996, the United States responded to the massing of Iraqi troops near the Kurdish region of northern Iraq by putting its forces in the region at a heightened state of readiness, sending a message to Iraqi leadership. After a short period to allow Iraq to change its behavior, the United States attacked several military sites in southern Iraq with Tomahawk land attack cruise

missiles to demonstrate resolve. This American pressure resulted in the gradual withdrawal of Iraqi forces.

The second instance began in the later months of 1997 when repeated Iraqi violations of the United Nations-imposed no-fly zones and non-compliance with weapon inspections mandates. The emerging crisis culminated with Iraqi threats to shoot down a United States spy plane. The United States and United Kingdom threatened military action, publicly preparing for military strikes in the final months of 1997. This overt threat resulted in a marginal degree of Iraqi compliance with weapon inspections, yet Iraq continued to threaten inspectors resulting in an intensified threat of force by the United States. These threats culminated in a greater military response, Operation Desert Fox in late 1998, featuring a prominent cruise missile element and manned attack bomber missions.

Hypothesis 3: There is no difference between the probabilities that democratic or autocratic states with cruise missiles will use military power to achieve foreign policy objectives.

As hypothesized, there was no significant statistical difference between the probabilities that democratic or autocratic states with cruise missiles will likely use military power to achieve foreign policy objectives. In the quantitative phase of this research, I used logistic regression to compare the interaction effects between autocracies and democracies who are with and without cruise missiles. This method tested the effect of cruise missiles on force initiation when combined with the dichotomous regime type democracy or non-democracy as defined by the Democracy-Dictatorship data set (Cheibub, Gandhi, and Vreeland 2010). Like my tests of Hypothesis 1, I replicated the

analysis using the ICB challenge and MID initiation variables. In each case, there was no significant statistical difference between democratic and autocratic states armed with cruise missiles and their probability of initiating military force.

To explore the interaction effects, I proceeded with an analysis of marginal effects to obtain predictive margins. I found there is scant difference between the probability a democratic state with cruise missiles and an autocratic state with cruise missiles will initiate either an ICB challenge or militarized interstate dispute. There is only a .1% difference in the predicted probability of initiating an ICB challenge based on regime type, and only a .2% difference in the predicted probability of a MID initiation.

Using the case studies to illustrate a null hypothesis presents a challenge. As with any case study, the analysis can be so narrow as to be of little more than anecdotal value and therefore not reliably generalizable. However, it is worth noting that each case study represents a situation where an autocratic regime (1982 Argentina; 1996 Iraq) and a democratic state (The United States of America) appeared to have had greater odds of using force in a cruise missile context. In each case, regime type and domestic politics played roles. In the Falkland Conflict, there is a strong argument that the primary explanation for Argentina's forcible incursion was to divert attention away from domestic strife, social unrest, and a flagging economy (e.g. Levy and Vakili 1992; Oakes 2006). With a limited number of air-launched Exocet cruise missiles in operation the junta could reasonably (though ultimately erroneously) expect a hedge against British retaliation, possibly lowering the expectation of casualties.

In the case of the United States' missile diplomacy, the use of cruise missiles to respond to foreign policy crises played well to domestic audiences. Though some argued

that some cruise missile raids were, in part, an attempt by President Clinton to divert domestic attention from political scandal (e.g. Hendrickson 2002a, 2002b; O. R. Holsti 2011; Reitman 1999), the consensus is mixed. Regardless of the exact political motivation, by using cruise missiles, the United States reduced or eliminated the risk to service personnel abroad while the Tomahawk's precision permitted a target and timing selectivity to reduce collateral human costs in the adversary nation. Thus, in both case studies, the interaction between the capabilities provided by cruise missiles and domestic audience costs played a role, to some degree, in the decision to initiate armed conflict.

Policy Implications

This dissertation has implications for how policy makers may wish to approach existing and future military policy. Though I do not advocate for or against any particular policy approach, the postulated implications I present here could impact how leaders may wish to manage cruise missile-related policy in the future. The following section presents a modest speculation about this research's implications. Our new understanding of the relationship between cruise missiles and the likelihood of initiating military force, threats, or displays of force continues to evolve as technology, state needs, and political expectations change. I begin by considering the surprising observation from Chapter Three related to the Missile Technology Control Regime. Though the regime's intent is to curb the spread of nuclear weapon delivery vehicles, membership in the regime appears to be positively correlated with cruise missile procurement. This disconcerting inference leads us to a discussion of the dangers of cruise missile proliferation considering their possession appears to be related to increased incidences of

conflict initiation. Next, I examine the debate surrounding the modernization of legacy cruise missile programs in the United States, such as the proposed next generation cruise missile as advocated in the 2018 Nuclear Posture Review. Finally, I look to analogous weapon systems that have the potential to supersede the cruise missile's place in defense strategies, remotely piloted aircraft (drone) and hypersonic weapons. These new and emerging weapons, respectively, share many of the same characteristics that make the cruise missile an ideal weapon for state coercion. As such, it may not be surprising that these weapons could potentially share similar implications for international peace.

In 1987, the G-7 industrialized countries released guidelines for an informal, agreement between states, with the objective of reducing the threat of nuclear proliferation by reducing the proliferation of nuclear delivery systems such as ballistic and cruise missiles (Government of Canada 2017).⁵⁶ The G7 countries created the Missile Technology Control Regime (MTCR) in response to a growing concern over the proliferation of nuclear weapon delivery platforms, especially ballistic missiles, in the 1970s (Ozga 1994). The regime also included limitations on the transfer and sale of cruise missiles, and related technologies, with ranges greater than 300 kilometers and a payload capacity greater than 500 kilograms (the weight of a small nuclear warhead). While this prohibition effectively reduced or eliminated the exchange of advanced land attack cruise missiles, it still permitted the sale of smaller anti-ship cruise missiles. In fact, the United States remains a significant exporter of the anti-ship Harpoon cruise missile and France continues to be successful in its sale of the Exocet missile worldwide

⁵⁶ The G7 consists of Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States.

(Carus 1992). Leaving the market open to these ASCMs means we risk these missiles falling into the hands of groups willing to use them to pursue terrorist or insurgent objectives, as was the case with the attacks on American and Emirati ships off the coast of Yemen when they were fired upon by Iranian versions of the Chinese-built C-802 ASCMs (Binnie and Gibson 2016; Iranian Cause and Effect 2016). But, despite efforts such as the MTCR to curtail their proliferation, cruise missiles continue to spread (Mistry 2002). This dissertation's findings support this assessment.

The quantitative analysis in Chapter Three yielded a surprising result with direct application to the efficacy of the MTCR. Whereas Mettler and Reiter (2013) found no significant relationship between regime membership and ballistic missile acquisition, I found membership to have a significant positive correlation with cruise missile acquisition. In short, when a state joins the MTCR, cruise missile proliferation likely increases. This presents a problem for the regime. If the intent is to curtail the proliferation of these weapons, why then does it appear to positively correlate with cruise missile proliferation? As I note in Chapter Three, we may be able to attribute the connection to the elevation of trust between states. Joshi (2016) notes that when a new state joins the MTCR they may signal that they are willing to strengthen their export controls, reducing supplier states' perceived risk that their technology will, in turn, be supplied to a third party. This appears to have been the case for India in 2016. After induction into the MCTR, they found it easier to purchase Predator drones from the United States and they may soon be exporting their own BrahMos cruise missile to other states in the regime (Joshi 2016; Mitra 2018). This apparent contradiction between the intent of the MCTR and the practice of cruise missile proliferation should give policy

makers a moment of reflection and reason to revisit the topic of cruise missile proliferation.

Cruise missiles continue to spread to new countries, despite international agreements designed to curb their proliferation as states seek defense alternatives that provide a wider range of options in a crisis. Since 1990, cruise missile procurement has been largely relegated to peripheral states as they seek ways to efficiently close the gap between themselves and wealthier states who have the capacity to develop and field more technologically sophisticated equipment. Understanding the connection between cruise missiles and the initiation of military force advances our understanding of the relationship between advanced military technology in future conflict and may have implications for future counter-proliferation policy and weapon procurement.

Cruise missile proliferation may increasingly become a concern for international security as countries seek efficient alternatives to more costly and sophisticated airpower platforms. Policy makers have only started to shift their focus back to cruise missiles due to their unique and growing operational capabilities. As I note below, though cruise missiles appear to be a popular and versatile coercive weapon, we still do not understand their effectiveness to produce meaningful changes in adversarial behavior. In larger conflicts, cruise missiles used in isolation may not provide enough damage to be decisive. After all, the use of more than fifty cruise missiles on a Syrian airfield in 2017 was not enough to dissuade the Syrian regime from using chemical weapons on its own people.

However, in the hands of violent extremist organizations (i.e. terrorists), the consequences of cruise missile use could be more significant. Not only could cruise missiles be hidden on civilian container ships and unleashed on hapless coastal cities, the

versatile payload capacity enjoyed by most modern cruise missiles bring a potential of delivering non-nuclear weapons of mass destruction such as chemical and biological weapons (Kiziah 2003). This danger increases as more states, particularly poorer revisionist states with ties to extremist groups and less inhibitions against proliferation, seek to purchase cruise missiles to fill gaps in their defenses by exploring cheap alternatives to expensive ballistic missile and stealth aircraft systems (Gordon 2003; Gormley, Erickson, and Yuan 2014).

Policy debate in the United States revisited the role of cruise missiles in the national defense strategy with the controversial proposal to design and deploy a modern, stealthy, next generation cruise missile, the Long Range Standoff (LRSO) weapon, to replace the aging Tomahawk land attack cruise missile as the primary conventional and nuclear air-launched delivery system (Lowther and Agnes 2016; Perry and Weber 2015). Opponents argue the new missile is not needed in light of the billions projected to be spent on a new, stealthy, deep-penetrating bomber being developed by the U.S. Air Force (Harrison 2016). A new cruise missile of the advanced type proposed by the DoD, they say, would only be useful for providing a redundant standoff capability for aging bombers such as the B-52, yet their very presence could destabilize for international security by potentially instigating an arms race. Simply put, the LRSO would be redundant and cause more security problems than it would solve.

Conversely, proponents assert the new missile will provide capabilities a new bomber simply cannot provide. Besides their ability to effectively evade air defenses, the loss of a single cruise missile carries a far lower cost in both man and material than a bomber and its crew and serves to enhance global stability by bolstering nuclear

deterrence. Furthermore, proponents argue cruise missile capabilities must continue to advance in the face of an aging fleet which is becoming increasingly unreliable (Woolf 2017).

The 2018 Nuclear Posture Review (NPR) (2018a), a recurring U.S. Department of Defense report outlining the role of nuclear weapons in national defense, echoes the concerns over cruise missile modernization in the face of adversarial cruise missile development and deployment. The NPR highlights the threats posed by adversary state cruise missiles such as those deployed by China in the South China Sea and Russia's aggressive nuclear modernization program. The document ultimately calls for the modernization of American cruise missile systems including development of the LRSO weapon (Mattis 2018a).

This research intersects with current American policy guidance by identifying whether cruise missiles inherently lower the bar for military strikes at levels below the threshold of warfare. Considering the evidence presented here, a new cruise missile with even more enhanced capabilities than what already exists may prove to be a tempting coercive weapon. As major cruise missile producing states continue to modify and improve their existing systems, the implications for future limited conflict initiation could be dire.

Aside from highlighting the possible dangers posed by cruise missile proliferation, this dissertation may be extrapolated to similar weapon types such as remotely piloted aircraft (RPA), also known as drones, and hypersonic weapons. RPAs and cruise missiles have many characteristics in common. Like a cruise missile, an armed RPA can precisely deliver a bomb to a target with minimal collateral damage or

risk to the user (Chehtman 2017). However, unlike a cruise missile, the RPA can return from its mission and be used for surveillance and reconnaissance. Though there are many types of RPAs, most enjoy the advantage of reusability and persistence (the ability to linger for extended periods of time) over the target area (Bergen and Rothenberg 2014; Ehrhard 2010; Kaag and Kreps 2012).

Much of the scholarship on RPAs debates the ethicality of their use. Since they are piloted remotely, and they often operate in a grey area of belligerency, RPAs are typically used outside the battlefield in civilian areas where the risk of collateral damage can be high (Andresen 2016). Furthermore, the use of RPAs by the United States has generally happened in secret, or at least far from the domestic spotlight, leading some to question whether or not their use removes the domestic audience from the decision to use force abroad (P. W. Singer 2012). Since RPAs and cruise missiles share many of the same operational characteristics and similar use norms, the outcome reported here that states with cruise missiles are more likely to initiate military force may extend to states with RPAs. If RPAs similarly affect force initiation, policy makers should take note and perhaps go as far as to consider incorporating RPA technology in a construct such as the MTCR.

Another analogous weapon to the cruise missile is the hypersonic missile. A hypersonic missile is one that can travel at extremely high speeds, in some cases five times the speed of sound, and extremely long distances, providing the ability to strike a target anywhere around the globe in a matter of minutes (White and Price 1999). Most modern weapons lack the ability to attack time-sensitive targets at long ranges. Hypersonic weapons, however, promise to provide that capability while evading ever

more capable missile defenses (Brumfiel 2018; White and Price 1999). The United States, China, and Russia have all made aggressive steps to develop hypersonic technology. The last decade has seen an increasing number of operational tests, though there currently does not exist a fully operational hypersonic weapon system.

Once an operational hypersonic missile is fielded, there will be no known defense against it and unlike modern cruise missiles that often take hours to reach their target, a hypersonic missile may only take minutes (Deptula 2018).

A hypersonic missile takes the advantages of speed, stealth, maneuverability, and precision provided by cruise missiles and multiplies them exponentially. Though not yet fully operational, it has already been postulated that as hypersonic missiles proliferate, they can pose a serious threat to international stability (Al-Rodhan 2015; Brimelow 2018; Deptula 2018; Ekmektsioglou 2015; Speier et al. 2017). Their lightning-quick ability to penetrate defenses with almost no notice can potentially disarm an adversary before they have time to react, forcing a “launch on warning” posture when a target state is forced to retaliate before inbound missiles reach their destinations. Such a posture may be inherently destabilizing by significantly compressing the time to thoughtfully respond to perceived attacks (Speier et al. 2017).

Policy makers are just beginning to grapple with the potential consequences of hypersonic weapons. Though the cruise missile, may appear quaint when compared with hypersonic weapons, there is an obvious parallel between the two in terms of coercive potential. Having established an empirical connection between cruise missiles and conflict initiation, we may assume that hypersonic missiles may have a similar effect on state behavior. Despite calls to incorporate hypersonic weapon technology into the

MTCR (Speier et al. 2017), the apparent positive correlation between MTCR membership and cruise missile proliferation should be a warning that non-proliferation regimes may have unintended consequences.

As the United States enters the Post-Post-Cold War era, understanding how the capabilities of qualitatively unique weapon systems affect conflict is particularly salient. Cruise missiles provide unique and eminently usable capabilities. Their stealth, precision, and portability can make their presence a significant disruptor in modern warfare. Dennis Gormley (2008c), a leading scholar on cruise missile proliferation warns, “Though new weapons do not inherently increase the risk of conflict, when coupled with preemptive doctrines, advanced weapons that are difficult to detect and that could allow for a surprise attack-especially those seen as capable of producing decisive results without recourse to WMD-may tempt states to take risks.” (8)

As I have established here, cruise missiles appear to encourage states to take risks, future arms agreements should take this into more serious consideration. This contribution provides the policy community with empirically tested conclusions that help explain how an increasingly proliferated weapon helps shape the use of military force. This new information should help policy makers shape future cruise missile proliferation policy and mitigate potentially destabilizing coercive measure between adversaries.

Contributions

Beyond the policy implications, this dissertation provides multiple scholarly contributions to international relations study. It adds to our understanding of the relationship between technological weapon development and armed conflict with the

first-ever systematic empirical investigation into the correlation between cruise missile possession and force initiation. Most notably, it bridges the gap between the force initiation and cruise missile literature by empirically demonstrating that there is a significant correlation between a state's possession of cruise missiles and the likelihood it will initiate conflict. Though the existing force initiation literature focuses on state-centric characteristics such as regime type, wealth, great power status, and territorial contiguity, there is a niche for understanding how particular weapons shape state behavior. Fordham (2004), Mettler and Reiter (2013) and Horowitz, Kreps, and Fuhrman (2016) have led the way in this effort.

I seek to contribute my part by both articulating a theory to explain the connection between cruise missile possession and the use of force based on coercion theory and systematically testing for empirical evidence to support said theory. Additionally, Appendix A provides a new schema for understanding the cruise missile's historical utility by typifying three phases of cruise missile development, largely based on the American experience, that demarcate the weapon's place in military doctrine. This new way of classifying the missile's technological advancements adds to the cruise missile literature by providing a framework for understanding how the general limitations on cruise missile capability throughout history affected its impact on military strategy and utility.

In addition, I provide an original data set capturing the current state of cruise missile possession. By querying the Stockholm International Peace Research Institute (SIPRI) Arms Transfers Database (SIPRI 2015), I was able to determine the year of initial cruise missile acquisition for states without indigenous cruise missile production

capability. These data were then cross-referenced with information provided by the National Defense Intelligence Agency (Systems 1999), Kueter and Kleinberg (2007), and Werrell (1985) to validate the dates and types of cruise missile possession for states with domestic cruise missile programs that predate previous arms transfers in order to get the most accurate picture of which states do and which do not have cruise missiles. Future research can easily incorporate this data into later investigations using common conflict data sets for quantitative empirical tests.

Beyond developing a new quantitative data set, I provide a qualitatively different perspective on the Falkland Conflict. The Falkland Conflict is generally treated as a textbook example of diversionary theory (e.g. Levy and Vakili 1992; R. A. Miller 1999; Oakes 2006). As Robert Farley (2018), a visiting professor at the U.S. Army War College notes, “The Falklands War ended with a decisive British victory over thirty years ago. Nevertheless, the war remains alive in the imagination of analysts and historians ... the issues that brought about the war, the way the war was fought, and the situation the war left behind continue to hold important lessons for practitioners of foreign policy today.” (n.p.) This dissertation approaches the 1982 fight between Argentina and the United Kingdom from a new angle. While acknowledging the application of diversionary theory, I also argued that Argentine cruise missiles increased the chance that the Falkland Islands would be taken by force by providing a robust denial capability to hedge against British military retaliation. Previous treatments note the significant role played by the Exocet missile, but omit its qualitative contributions to the initiation of the conflict itself.

Finally, this dissertation provides surprising challenges to existing research. When using MID initiation data rather than ICB challenge data, I found Mettler and Reiter's (2013) conclusion that ballistic missile possession increases the likelihood of conflict does not hold. Rather, using a different measure more specific to force initiation, rather than the more broadly defined crisis initiation, logit and probit models produced no significant relationship between ballistic missile possession and the initiation of threats, displays, or uses of force. Additionally, as noted above, unlike Mettler and Reiter's (2013) assertion that there is no relationship between ballistic missile procurement and MTCR membership, and Barkley's (2008) conclusion that MTCR membership is negatively correlated with ballistic missile possession, I find MTCR membership is positively and significantly correlated with cruise missile acquisition. Also, states with ballistic missiles have a positive and significant chance of being the target of threats and displays of force. This may be a testament to their socio-political significance and a focus of arms control rather than practical military utility.

Limitations and Areas for Future Research

Though this research succeeded in finding evidence to support its initial premise, it is nevertheless limited in scope. But where this dissertation falls short, future research realizes opportunity. First, though I include full-scale warfare in the default coding scheme for elements of my data analysis, the main crux of my thesis does not propose that cruise missiles increase the incidence of war. Rather, as coercive instruments, cruise missiles have utility throughout the full spectrum of conflict as states seek mechanisms to impose their will upon their adversaries. Future research may discover utility in testing

for the effects on war initiation, exclusively, especially as more sophisticated weapons, such as drones and hypersonic weapons, are developed and become more prevalent. How do these new weapons, and cruise missiles, change power disparities between states? Do they invite preemptive action or perhaps increase escalation?

Second, I do not necessarily propose that states will use cruise missiles as first strike weapons in conflict, nor do I examine cruise missile use in isolation. This research does not predict every condition under which a state may launch a cruise missile other than to assert that the capabilities provided by modern cruise missiles make them a logical choice for coercive airpower. As noted in Chapter Five, the United States discovered in the 1990s that cruise missiles make ideal weapons to exert punishment for adversarial transgressions. However, as Chapter Four demonstrated, just because a state possesses cruise missiles does not mean these weapons will constitute the first volley against an adversary. Rather, the capabilities they provide may support a more aggressive and broader strategy. When the data is more readily available, additional research that codes for the circumstances surrounding the specific use of cruise missiles in the past may be able to predict when cruise missiles are most likely to be used in the future.

Third, this dissertation did not test for the effectiveness of using cruise missiles in a coercive campaign. Furthermore, having treated all cruise missile's as essentially non-nuclear, this research did not comment on the cruise missile's coercive value as either a conventional or nuclear deterrent. Pape (1996) warns us that coercive strategies present challenges for the coercer and do not always provide the desired results. Essentially, reasons Pape, bombing alone is a poor coercive tool. But bombing as a coercive strategy

will never go away due to entrenched bureaucratic interests and political pressure. Pape asserts, “Sometimes states can succeed only by decisively defeating their opponents.”

(314) Though Pape is generally writing about strategic bombing campaigns, his warning translates well to the use of cruise missiles for coercion. The cruise missile’s utility as a vanguard weapon to eliminate air defenses in preparation for more large-scale combat is generally unquestioned, but their actual effectiveness as a coercive tool has gone largely unmeasured. Anecdotally, one could make a strong argument that despite the low cost, when used alone, the cruise missile lacks the firepower required to make meaningful change in an adversary’s behavior. After all, when over fifty cruise missiles failed to stop the Syrian regime from using chemical weapons on its people, the United States and its allies used over one hundred more cruise missiles a year later to dissuade the regime from again using chemical weapons. The first strike was not enough to significantly affect the Syrian regime’s behavior.

However, one could also argue that the cruise missile’s ultimate effectiveness as a weapon is irrelevant. Its real power comes in the form of the signal it can send to other nations by strengthening the credibility of threats. For instance, had the Obama Administration used cruise missiles to attack Syria when the Syrian dictator Bashar al-Assad used chemical weapons on its own people, a “red line” for President Obama, perhaps states like Russia and China would not have been emboldened to invade Ukraine and encroach in the South China Sea.

Although cruise missiles by themselves may not bring enough destructive power to dissuade a state adversary, as noted by the recent experience with Syrian chemical weapons attacks, they may provide the sort of precision attack needed to dissuade

adversaries on the grey margins where non-traditional threats operate for limited objectives and in conflicts short of war. Future research is needed to understand how evolving conventional capabilities affect the use of force. Given the central role cruise missiles play in the United States' use of military force, it will become increasingly important to understand these new dynamics.

Fourth, this dissertation did not question whether the increased likelihood of using military options to confront foreign policy challenges associated with cruise missile possession constitutes an unjust use of force. Does the greater probability of using force to solve an international dispute, brought by the cruise missile's capabilities, make their use unjust or does the use of cruise missiles as a means of limiting casualties justify the increased prospect of violence? Does the relative ease with which cruise missiles may be used for limited punishment constitute a just and proportionate use of force?

Similar questions have been asked about the ethicality of the American use of RPAs to pursue terrorists across sovereign borders (e.g. Ahmad 2014; Andresen 2016; Brunstetter and Braun 2011; Calhoun 2003; Chehtman 2017; Enemark 2013; Kaag and Kreps 2012; P. W. Singer 2012; Stiltner 2016; Williams 2015). Brunstetter and Braun (2011) argue that because RPAs can offer coercion short of full-scale war, they can provide a more proportional response to certain security threats. However, they also concede that the ease and safety of RPAs may also encourage countries to manufacture specious justifications for their employment, what the authors call a, "potentially worrisome," (339) situation. Based on this dissertation's results, we could ask the same of cruise missiles. If they do, indeed, lower the bar for the use of force, do states need to be more cautious that they are exercising force ethically and proportionally? The use of

RPA's in recent years for the extrajudicial killings of terrorists has cast a shadow over the use of cruise missiles, though the question deserves further research.

Final Thoughts

My research goal was to determine if a state's possession of cruise missiles increases the likelihood that state will use military force to resolve its foreign policy challenges. The question was not necessarily a new one. Researchers have pondered the effects of weapons on the use of force for some time. However, research into this subject focuses almost exclusively on nuclear weapons, as deterrence appears to have kept peace between superpowers during the colds war. But with the specter of nuclear annihilation a memory, at least for now, we turn our attention to the security challenges posed by other advanced technologies. As the world settles into a post-Cold War status quo, understanding whether the capabilities provided by these weapons increases, or decreases, the chances of conflict deserves attention. The answer to this question may inform not only policy avenues to pursue as diplomats negotiate agreements between states, but may also inform whether resources should be channeled into further weapon development.

Some weapons provide such a qualitatively different military capability that their possession alone may affect the relationship between states. The goal of this research was to investigate the possibility that cruise missiles were one such qualitatively different weapon. As the United States locates its place in the Post-Post-Cold War era, understanding how the capabilities of particularly capable weapon systems effect the likelihood a state will initiate a military use of force is important. Can a weapon provide

a capability so unique that having it in an arsenal changes the decision calculus of national leaders? Nuclear weapons, of course, may have this effect; however, nuclear weapons provide such an extreme capability that their use is primarily relegated to that of strategic deterrence. Cruise missiles, on the other hand, provide qualitatively unique capabilities. Not only are some cruise missiles capable of themselves carrying nuclear weapons, but their stealth, precision, and portability can make their use a game changer in modern warfare. It is no wonder they have seemingly become the weapon of choice for the United States when there is a call to punish an adversary.

This dissertation provided the first systematic empirical test of the effects of cruise missiles on the initiation of military force. Using an explanatory sequential mixed methods design, it found that a state armed with cruise missiles is significantly more likely to use threats and displays of military force as well as initiate military force to coerce its adversaries. Furthermore, this research demonstrated that the increased probability of using force is independent of regime type. As such, the proliferation of these weapons should alarm national leaders seeking peace in the international community if a greater number of actors with these weapons means a greater possibility of conflict. With the nuclear-induced decline of large-scale conflict between major powers since the end of World War II, the question of how states can effectively demonstrate resolve without resorting to full-scale warfare becomes salient. The coercive capabilities cruise missiles provide at levels short of war have seemingly promised and delivered as a weapon capable providing an attractive coercive option as states pursue their foreign policy objectives.

APPENDIX A: THREE PHASES OF CRUISE MISSILE DEVELOPMENT

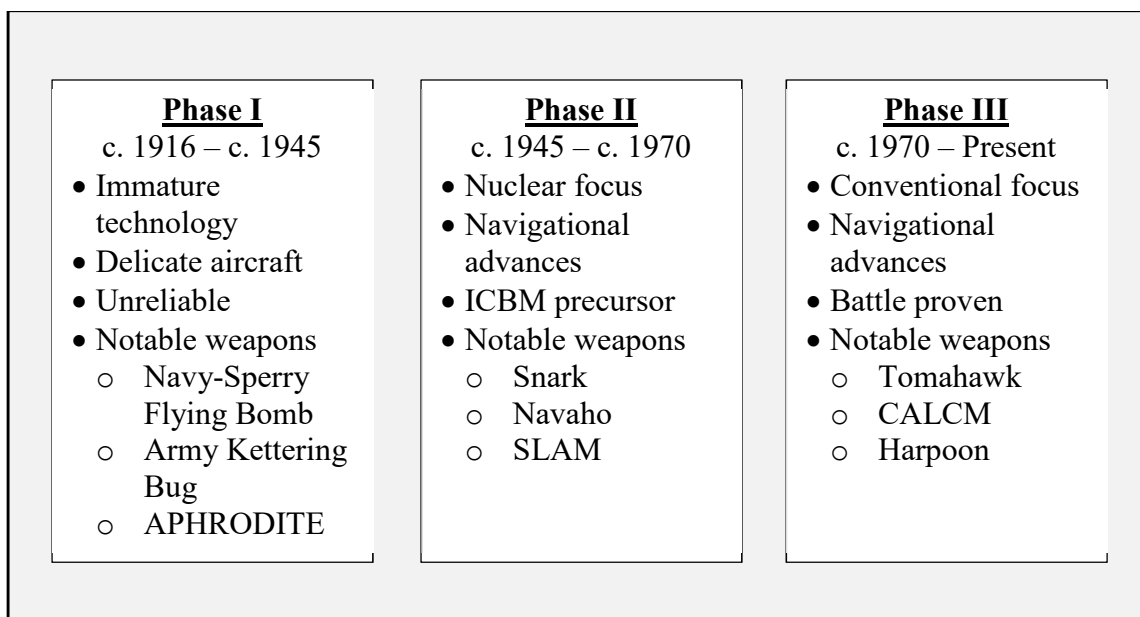
To understand how cruise missiles affect the initiation of military force, it is helpful to explain the evolution of the cruise missile's technology, doctrine, and use. This appendix proposes three distinct phases of historical cruise missile development wherein the technologies available largely shaped the limits of the cruise missile's capabilities. These capabilities, in turn, dictated the cruise missiles' utility as a coercive weapon. I begin by examining the history of the cruise missile program in the United States, typifying three phases of cruise missile technological development and use.⁵⁷ These three periods take the cruise missile from a weapon that lacked the ability to perform as advertised to a lethal weapon that is not only eminently usable, but would become the go-to weapon for American coercion in the 1990s and beyond.

I identify three phases of cruise missile development in the United States (Figure A.1). In the first phase, from World War I until the end of World War II (circa 1914-1945), the concept of a pilotless flying bomb came into its own. This phase is marked by a weapon whose concept was sound but lacked the technological requirements to fully develop. Only in the final days of World War II do the required advancements in propulsion and navigational technologies allow the German Luftwaffe to effectively field the first fully operational cruise missile, the V-1 "Buzz" bomb.

⁵⁷ Though several countries have developed significant cruise missile programs, creating their own unique doctrine over time, as the originator of the cruise missile concept, the U.S. experience is indicative of the technological and political challenges that shaped modern cruise missile use. Therefore, rather than develop a historical narrative around every state's cruise missile program, I use the American case to illustrate how cruise missiles have gone from tactical battlefield concept, to nuclear strategic and tactical weapon, to coercive option in 100 years of development and progress.

The second phase (circa 1945-1970) saw prolific technological advancements following the end of the Second World War. These advancements enabled weapon engineers to revisit earlier disappointments in the development of flying bombs. While not perfect, the advancements made over the course of the Cold War, fueled by ideological competition between the superpowers, finally brought the technologies that would make the cruise missile usable together as a nuclear delivery system and effective anti-ship weapon.

Figure A. 1 Three Phases of Cruise Missile Development in the United States



Note: SLAM = Strategic Low Altitude Missile; ICBM = Intercontinental Ballistic Missile; CALCM = Conventional Air-Launched Cruise Missile

The third phase of cruise missile development (1970-present) begins in the waning years of the Cold War. Advancements in navigation and a newfound appreciation for conventional applications enabled what was once the “unwanted black sheep” of the weapons community (Werrell 1989) to take a central role in conventional denial and punishments strategies in the decade following the fall of the Soviet union. It

is in this phase that the Tomahawk cruise missile would come into its own and enable the United States to demonstrate a decisive foreign posture toward threats while minimizing the risk to military personnel and collateral damage abroad.

Phase I

Although the modern cruise missile matured in the second phase of cruise missile development following World War II, the United States conceived of the concept of a flying, pilotless, bomb during World War I. Remarkable failures and immature technologies that held the notion of a flying bomb in check marked these early years. In 1915, the inventor of the mercury vapor lamp, Peter C. Hewitt, approached Elmer A. Sperry of the Sperry Gyroscope Company with the idea for a “flying bomb” (Werrell 1985, 7).⁵⁸ With the backing of the United States Navy, the scientists began development of the Navy-Sperry Flying Bomb. This early cruise missile-like aircraft was little more than a miniature canvas biplane that could be launched in the direction of the enemy, mechanically programmed to cease flight when it had flown for enough time to likely be over an enemy target.

The prototype Hewitt and Sperry developed had multiple advantages over existing piloted aircraft of the time. Because they intended the weapon for one-way travel, it had a longer theoretical range than a manned aircraft, meeting a need for a weapon that could strike deep behind enemy lines, farther than artillery could reach. Additionally, because the craft was unmanned, and the body mostly consisted of canvas, these early prototypes

⁵⁸ Unless otherwise noted, the general history and background contained in this section is derived from Werrell (1985).

could absorb a large amount of enemy fire with little overall structural damage. Bullets would simply pass through leaving a small hole in their wake. The only reliable way to shoot one of these early weapons down was to manage a precise hit to the engine. Finally, because there was no pilot, the aircraft could not be scared away with anti-aircraft defenses or nearby enemy interceptor aircraft. However, with these advantages came clear disadvantages.

The limited technology available in the first half of the Twentieth Century severely hobbled these early prototypes. The test model Sperry and Hewitt developed was expensive, had a complicated launch system, and its inaccuracy made it all but impossible to hit a target at range. In addition, the United States Army also developed a flying bomb at this time in parallel with the Navy version. Dubbed the Kettering Bug after its primary developer, Charles F. Kettering, future vice president of General Motors, and for its small, uncomplicated, design, the Army version, like the Navy version met with limited success. Only 1 in 12 Navy tests functioned properly while the Army version enjoyed a comparatively successful 3/5 average.

These early projects revealed hard lessons that engineers would need to address in the years to follow. First, developers discovered that simply getting an unmanned aircraft into the air was a challenge unto itself. Because the vehicles were delicate, a crash on launch meant a total loss, complicating development. Second, without a pilot, building an aircraft that could remain stable over long distances, given the limited technology of the time and a trial and error development process, proved difficult if not impossible. Third, because designers intended these weapons to be cheap, one-way aircraft, each model that was launched was destroyed, limiting the ability to gather lessons learned off

the crash remains. Finally, neither guidance systems, nor engines, worked as advertised. In the future, the guidance and propulsion obstacles would prove the most difficult obstacle to overcome.

The interwar years saw a lull in progress.⁵⁹ For its part, the United States Navy focused on the development of flying drones. The Navy primarily used these drones for target practice, though there were some attempts at offensive weapon development. But, as World War II began, personnel shortages and costs put pressure on the Navy's program. Critics argued the drones were unnecessary and offered few benefits over manned aircraft. The most notable development in drone aircraft was an Army Air Corps program, code named APHRODITE. This ambitious program used worn-out B-17 heavy bombers that were stripped of equipment and packed with 18,500 pounds of explosives. A pilot and a technician would take off with the aircraft, but bail out before reaching enemy territory. From there, the aircraft flew via radio commands, with a remote pilot able to navigate the aircraft to its target using a television camera (A. L. Weeks 2000). But even with marginal successes, the APHRODITE aircraft were still limited by weather, vulnerable to enemy defenses, and limited in accuracy. By 1945, the allies abandoned the program.⁶⁰

⁵⁹ The lull in development was an American phenomenon. In Great Britain and particularly Germany, the utility of a pilotless bomb was clear to military leaders. As such, research into cruise missile technology was supported and encouraged, more so on the eve of World War II. In Germany, this research culminated in the V-1 "Buzz Bomb" (Farquharson 2002).

⁶⁰ Notably, Joseph P. Kennedy, oldest brother of President John F. Kennedy, was killed on an Aphrodite mission when the drone bomber he piloted inexplicably exploded after takeoff (Hanle 2007).

Phase II

The second phase of cruise missile development effectively began in the waning years of World War II with the German V-1 “Buzz Bomb.” Taking advantage of the short distance between occupied France and England, and pressured with pilot shortages, Germany created a flying bomb so groundbreaking that it served as the template for future cruise missile designs. Often overshadowed by its larger, more successful, and perhaps more psychologically menacing counterpart, the V-2 rocket, the V-1 was a winged aircraft with a pulse jet engine capable of traveling an average of 150 miles at 400 miles per hour and hitting a target the size of a city.

The Germans launched the V-1 from a rail system with the assistance of a booster rocket. From there, it navigated to its target using a magnetic compass and barometric device which sent signals to the rudder and tail surfaces for control. A small propeller in the nose counted rotations, arming the weapon at 38 miles, and locking the controls to put the V-1 into a dive at a pre-programmed distance. Germany produced 30,000 V-1s in the war, launching 10,492 at London with a 23% success rate. Although the weapons managed to kill over 6,000 civilians, they were limited by their fixed launch sites which made their flight paths predictable. Once found, they were relatively easy to shoot down or knock off balance by flying alongside and tipping their wings. If they did reach their target, their limited accuracy and small warhead made them more successful as a psychological, rather than a military, weapon. When the war was over, the United States became interested again in the idea of a relatively small, disposable flying bomb, so the military captured several German V-1s for a new American program, the JB-2.

While the United States' armed services each experimented with their own versions of the JB-2, iterations such as the Navy's Loon and the Air Force's JB-10, these met limited success. But as an evolutionary step in technology, these V-1 derivatives demonstrated a proof of concept that the technology had advanced sufficiently to begin work on new cruise missile programs with a shift in emphasis from technical development to international and domestic political considerations. With the separation of the Air Force from the Army in 1947 (National Security Act 1947), the question of which service would take the lead in cruise missile and ballistic missile development arose, causing friction between the services. Ultimately, the Air Force became responsible most cruise missile development with the Army and Navy maintaining limited research programs of their own.

The late 1940s and early 1950s saw incremental developments in cruise missile technology. The Air Force's intention was to quickly put nuclear armed intercontinental cruise missiles into production as a stop gap while designing and producing intercontinental ballistic missiles (ICBMs) that would eventually take their place (Stine 1991). Conversely, the Soviet Union, outmatched at sea, focused on using cruise missiles in anti-ship roles. Later, the Soviets unsuccessfully attempted to match American efforts in intercontinental long-range nuclear cruise missile technology, attempts that their Russian successors have continued off and on until today (Gordon 2017; Huisken 1981).

In 1949, the Air Force began operational tests of the Northrop Snark cruise missile. Engineers designed the Snark to travel at high speeds and have much larger range and payloads than their JB-2 predecessors. Still requiring a way to navigate these systems over long distances, the Snark was piloted remotely via a control aircraft, but in

later tests it used an inertial navigation system monitored by celestial navigation. Despite a history of test failures, increasing requirements on the Snark led to the demand for longer ranges and increased payloads. Though advanced for the time, the celestial navigation system was not up to the task of tracking celestial bodies while traveling hundreds of miles an hour and having to fight wind currents. Engine, fuel, aerodynamic, and navigational problems plagued the Snark, making it a metaphor for a failed weapon system. A common quip at the time referred to its Atlantic testing range as, “Snark infested waters.” (Zaloga 1993) One Snark was even lost entirely, its remains found more than twenty years later by a Brazilian farmer in the Amazon rainforest (J. P. Anderson 2004). Finally, in 1961, the Air Force scrapped the project due to its perceived lack of military value as compared to increasingly sophisticated ballistic missiles.

Concurrently developed with the Snark, the North American Navaho cruise missile was more ambitious and technologically advanced weapon. Unlike the subsonic Snark, which was planned to be put into service first, the Navaho was designed to be supersonic with a range of 5,500 miles. But like the Snark, the Navaho was plagued with test failures earning it the nickname “Never go, Navaho.” (Gibson 2004) Yet, before its cancellation in 1957, in favor of the Atlas ICBM, the Navaho produced key technological advances. It was the first turbo-jet powered vehicle to fly two times faster than the speed of sound and the first to fly under computerized guidance (Boeing n.d.).

By the 1960s, the cruise missile offered only two advantages over ballistic missiles and manned aircraft. First, they were a cheaper weapon system than ballistic missiles and bomber aircraft, but only so much as it could be relied up on to reach its target. Second, the cruise missile still did not put a pilot at risk. The ability to minimize

operational risk eventually became an incredibly important political consideration for the American way of warfare in the coming decades.

However, for military leadership, the disadvantages outweighed the advantages. The cruise missiles of the 1950s looked like aircraft but did not perform as well, and they were operationally inflexible. Unlike cruise missiles, a leader could recall bombers from their missions if the political winds changed at the last minute. Similarly, states could use bombers as a show of force by flying along a country's border. But a cruise missile, like a ballistic missile, once launched could not be recalled. Finally, with the technology of the time, the cruise missile could not compete with the accuracy of bomber aircraft. Navigation continued to plague programs. By the close of the 1960s, the military shifted its focus away from the cruise missile concept toward related, yet feasible for the time, projects such as decoys and standoff weapons (Huisken 1980, 1981).

This shift in effort enabled weapon developers to focus less on an entire cruise missile system and more on the technical obstacles impeding their progress through separate, but related programs. Aside from the seemingly endless navigation challenges, payload weight also challenged engineers. With conventional warfare an afterthought at this point in the Cold War, the primary goal for these missiles was to deliver a nuclear weapon. The nuclear weapon dropped on Hiroshima at the end of World War II weighed ten tons and yielded a blast equivalent to 20 kilotons of TNT. With advances in weapon design, nuclear weapons in the 1960s could be made to weigh less than 500 kilograms and yield 200 kilotons (Van Creveld 1991). These significantly smaller warheads were now not only able to fit on an ICBM, but could facilitate the development of a smaller cruise missile as well.

A second advancement in related weapon design was the development of small turbofan engines (Werrell 1989). Cruise missiles such as the Snark were fitted with huge, gas guzzling engines that made the entire airframe the same size as a typical manned jet fighter. With smaller, more efficient, turbofan engines, it would be possible to reduce the size while increasing range. Smaller, high capacity computers improved navigation with the development of satellite terrain contour mapping (TERCOM) technologies. Designed to overcome navigational challenges for the short-lived Strategic Low Altitude Missile (SLAM)⁶¹ project, terrain mapping allowed more accuracy - within 300 feet, which is accurate enough for employing nuclear weapons (Betts 1982). With focus temporarily shifted from cruise missiles in both the Air Force and the Navy, these technologies were free to mature in other systems while waiting for the right political and operation need to come together in new cruise missile programs.

Phase III

The 1970s witnessed a sudden revitalization and renewed interest in cruise missiles as improved air defenses threatened the role of the strategic bomber in the nuclear mission. This renewed interest, combined with technological advancement sparked a third phase of cruise missile development characterized by greater accuracy

⁶¹ SLAM was an ambitious project. The missile was designed to carry multiple nuclear weapons that could be jettisoned over their Soviet targets as the missile navigated across the country. Its ramjet engine was designed to be powered by a small nuclear reactor giving it a theoretically unlimited range. To accomplish this mission, engineers developed a terrain guidance system that compared the terrain altitude under the vehicle with the terrain stored in its onboard computers using a radar altimeter. While SLAM never went beyond the testing phase, its terrain mapping system would go on to become the primary means of navigation for future cruise missile projects (Herken 1990).

and new conventional missions. Faced with the possible obsolescence of one of the three legs of the nuclear triad,⁶² the United States Department of Defense strongly supported the idea of a standoff missile that could be deployed from a strategic bomber to penetrate deep into the Soviet Union at a safe distance. The Air Force, reluctant to reduce the role of manned penetration tactics, resisted development, but was finally forced to proceed, in coordination with the Navy, when the Carter administration cancelled the new B-1 Bomber program in 1977 (Werrell 1989). The Navy, seeing the renewed potential for anti-ship cruise missiles (ASCM) following the sinking of the Israeli ship Eilat⁶³ and the Soviet Union's reliance on the ASCM to counter American naval dominance, took renewed interest in cruise missile development with the hope that advances in miniaturization would make smaller cruise missiles capable of land attack mission more practical for naval vessels (Mizokami 2016).

The third phase of cruise missile development saw advances leading to the modern weapons of today. Advances in ancillary components such as engines, fuels, materials, and navigational systems were evolutionary in the 1970s. However, the most crucial step forward was in the area of guidance. The long ranges demanded of previous interconnectional cruise missiles like the Snark meant that even small errors in guidance had huge effects over long distances. But with TERCOM developed, and subsequently shelved, for the SLAM, accurately navigating a cruise missile over land at long ranges

⁶² The nuclear triad consists of land-based ICBMs, ballistic missile submarines, and strategic bombers.

⁶³ The sinking of the INS Eilat, an Israeli destroyer, by a pair of Egyptian small missile boats using Soviet ASCMs in 1967 sent shockwaves through naval warfare and sparked an ASCM arms race. Within 10 years, most major navies would have their own ASCMs (Mizokami 2016).

became possible.⁶⁴ When combined with inertial guidance systems which were accurate enough to get a missile to a checkpoint where the TERCOM could fix a position and make adjustments, the TERCOM could be accurate to a target between 100 and 600 feet (Werrell 1985). But, because a conventional warhead, with exponentially smaller explosive capabilities than a nuclear warhead, required higher accuracy, the digital scene matching area correlator (DSMAC) system was developed. When combined with the inertial guidance and TERCOM system, the DSMAC could get the missile to within a few feet of its target (Betts 1982).

In the 1970s and 1980s, these advances in guidance, combined with engine miniaturization and fuel advancements, led to the development of the Tomahawk land-attack and anti-ship cruise missiles in both conventional and nuclear variants, the Conventional Air-Launched Cruise Missile (CALCM), capable of launching from wings and bomb bay rotary launchers on B-52 strategic bombers (Betts 1982), and anti-ship Harpoon missiles with active sea skimming and homing radar to fix its targets over water (Naval Air Systems Command n.d.). By the late 1980s, the United States military's Global Positioning System (GPS) satellite navigation system was operational and slowly integrated into the cruise missile's navigational suite increasing accuracy and capability. The navigational hurdle that held back the cruise missile for so long had finally been overcome.

Chapters Four and Five illustrated two newfound missions that typify the cruise missile's influence on coercive diplomacy in phase three. First, as an anti-access/area

⁶⁴ Because the sea is relatively flat with no fixed terrain, TERCOM does not work over water.

denial weapon capable of threatening first class naval powers, cruise missiles, such as the French Exocet, were employed by Argentina during the 1982 Falkland Conflict to threaten and attack the British Navy. Demonstrating their flexibility across the spectrum of denial, early in the dispute the Exocets offered denial through the perception that the British Navy would not be able to achieve its objectives in the South Atlantic. Later, the Exocets proved effective in wartime denial by making this threat a reality (Byman, Waxman, and Larson 1999). The Argentine Exocets were so successful that only five air-launched models were needed to significantly alter British strategy during the conflict by denying the British freedom of movement at sea (Huber 1995).

Second, following the successful use of the Tomahawk LACM in the 1991 Persian Gulf War, the United States discovered their utility as a means of threatening and executing punishment for transgressions, otherwise not meeting the threshold for greater use of force (e.g. troop deployments). Throughout the 1990s, and beyond, the United States repeatedly used cruise missiles as a means of “exemplary” use of force (George 1991). In other words, the limited use of cruise missiles to destroy enemy targets, just enough force to demonstrate resolve, may persuade the adversary to cease or reverse an action, yet stopping short of a level of action considered to be brute force.

Having distinguished between the three phases of cruise missile development, I build on these concepts in the dissertation using coercive diplomacy, a strategy made possible by advancements in technology and doctrine, as a theoretical framework. I proposed that the cruise missile’s evolution played a large part in its ability to affect state behavior. In the first phase of cruise missile development, the weapon was little more than an idea seeking to fill a tactical battlefield need. The second phase saw cruise

missiles become both a strategic weapon and a means of denying enemies at sea. It was not until the third phase of development that supporting technologies finally caught up with practical missions for the cruise missile. Now more than a nuclear delivery vehicle and way to threaten enemy shipping, cruise missiles in the third phase could both be used directly, or to strengthen, a state's coercive strategy to threaten, deny, or punish an adversary in situations where the use of force would otherwise be less likely. Hence, the possession of cruise missiles, by providing a qualitatively different capability than other weapons, increases the likelihood of a state using force to pursue its foreign policy objectives.

APPENDIX B: DATA ANALYSIS REPLICATION

This appendix describes the STATA 15.1 commands used to generate the results for the analysis provided in Chapter Three of this dissertation. Detailed descriptions of the variables are located in the dissertation text and variable description contained within the data set. The data set used to generate the results is CrawfordCruiseMissileStataDataSet.dta

STATA Replication Commands

The commands used to generate summary statistics in Table 3.2 are:

```
sum ICBchallenge MIDinitiation cruisea cruiseb BallisticMissilea BallisticMissileb
nucleara nuclearb distance contig PowerParity MajorPowera jointdemocracy pcys
pcys2 pcys3 if ICBchallenge <. & MIDinitiation <. & cruisea <. & cruiseb <. &
BallisticMissilea <. & BallisticMissileb <. & nucleara <. & nuclearb <. & distance <. &
contig <. & PowerParity <. & MajorPowera <. & jointdemocracy <. & pcys <. & pcys2
<. & pcys3 <.
```

The commands used to generate crosstabs in Table 3.3 are:

```
tab ICBchallenge cruisea, col all
```

```
tab MIDinitiation cruisea, col all
```

The commands used to generate crosstabs in Table 3.4 are:

```
tab ICBchallenge lacma, col all
```

```
tab MIDinitiation lacma, col all
```

The commands used to generate Models 1-3 in Table 3.5 are:

```
probit ICBchallenge cruisea cruiseb BallisticMissilea BallisticMissileb nucleara nuclearb
distance contig PowerParity MajorPowera jointdemocracy pcys pcys2 pcys3, robust
cluster (dyadid)
```

```
logit ICBchallenge cruisea cruiseb BallisticMissilea BallisticMissileb nucleara nuclearb
distance contig PowerParity MajorPowera jointdemocracy pcys pcys2 pcys3, robust
cluster (dyadid)
```

```
clogit ICBchallenge cruisea cruiseb BallisticMissilea BallisticMissileb nucleara nuclearb
distance contig PowerParity MajorPowera jointdemocracy pcys pcys2 pcys3,
group(dyadid)
```

The commands used to generate Models 4-6 in Table 3.6 are:

probit MIDinitiation cruisea cruiseb BallisticMissilea BallisticMissileb nucleara nuclearb
distance contig PowerParity MajorPowera jointdemocracy pcysr pcysr2 pcysr3, robust
cluster (dyadid)

logit MIDinitiation cruisea cruiseb BallisticMissilea BallisticMissileb nucleara nuclearb
distance contig PowerParity MajorPowera jointdemocracy pcysr pcysr2 pcysr3, robust
cluster (dyadid)

clogit MIDinitiation cruisea cruiseb BallisticMissilea BallisticMissileb nucleara nuclearb
distance contig PowerParity MajorPowera jointdemocracy pcysr pcysr2 pcysr3,
group(dyadid)

The commands used to generate Models 7-10 in Table 3.7 are:

probit ICBchallenge lacma lacmb BallisticMissilea BallisticMissileb nucleara nuclearb
distance contig PowerParity MajorPowera jointdemocracy pcysr pcysr2 pcysr3, robust
cluster (dyadid)

firthlogit ICBchallenge lacma lacmb BallisticMissilea BallisticMissileb nucleara nuclearb
distance contig PowerParity MajorPowera jointdemocracy pcysr pcysr2 pcysr3

probit MIDinitiation lacma lacmb BallisticMissilea BallisticMissileb nucleara nuclearb
distance contig PowerParity MajorPowera jointdemocracy pcysr pcysr2 pcysr3, robust
cluster (dyadid)

firthlogit MIDinitiation lacma lacmb BallisticMissilea BallisticMissileb nucleara
nuclearb distance contig PowerParity MajorPowera jointdemocracy pcysr pcysr2 pcysr3

The commands used to generate Models 11-14 in Table 3.8 are:

mlogit hostility cruisea cruiseb BallisticMissilea BallisticMissileb nucleara nuclearb
distance contig PowerParity MajorPowera jointdemocracy pcysr pcysr2 pcysr3, robust
cluster (dyadid) b(1)

mlogit, rrr

The commands used to generate Models 15-16 in Table 3.9 are:

mvprobit (ICBchallenge= cruisea cruiseb BallisticMissilea BallisticMissileb nucleara
nuclearb distance contig PowerParity MajorPowera jointdemocracy pcysr pcysr2 pcysr3)
(cruisea=mtr capabilities MajorPowera nukadum) (cruiseb=mtr lnencapb MajorPowerb
nukbdum), cluster(dyadid)

mvprobit (MIDinitiation= cruisea cruiseb BallisticMissilea BallisticMissileb nucleara
nuclearb distance contig PowerParity MajorPowera jointdemocracy pcysr pcysr2 pcysr3)
(cruisea=mtr capabilities MajorPowera nukadum) (cruiseb=mtr lnencapb MajorPowerb
nukbdum), cluster(dyadid)

The commands used to generate Models 17-18 in Table 3.10 are:

```
logit ICBchallenge i.bn.cruisea#bn.democracy BallisticMissilea BallisticMissileb
nucleara nuclearb distance contig PowerParity MajorPowera jointdemocracy pcysrs
pcysrs2 pcysrs3 if sidea1==1, cluster(dyadid)
```

```
margins, over (cruisea democracy)
```

```
logit MIDinitiation i.bn.cruisea#bn.democracy BallisticMissilea BallisticMissileb
nucleara nuclearb distance contig PowerParity MajorPowera jointdemocracy pcysrs
pcysrs2 pcysrs3, robust cluster (dyadid)
```

```
margins, over (cruisea democracy)
```

The commands used to identify candidates for case study analysis are:

```
logit ICBchallenge cruisea cruiseb BallisticMissilea BallisticMissileb nucleara nuclearb
distance contig PowerParity MajorPowera jointdemocracy pcysrs pcysrs2 pcysrs3, robust
cluster (dyadid)
```

```
predict ICBchallengefit
```

```
sum ICBchallengefit, detail
```

```
sort ICBchallengefit
```

```
list ISO3let1 ccode1 ccode2 ISO3let2 year if ICBchallengefit>=.0000362 &
ICBchallenge==1 & cruisea==1
```

```
list ISO3let1 ccode1 ccode2 ISO3let2 year if ICBchallengefit>=.0000362 &
ICBchallenge==1 & cruisea==0
```

```
logit MIDinitiation cruisea cruiseb BallisticMissilea BallisticMissileb nucleara nuclearb
distance contig PowerParity MajorPowera jointdemocracy pcysrs pcysrs2 pcysrs3, robust
cluster (dyadid)
```

```
predict MIDinitiationfit
```

```
sum MIDinitiationfit, detail
```

```
sort MIDinitiationfit
```

```
list ISO3let1 ccode1 ccode2 ISO3let2 year if MIDinitiationfit>=.0004729 &
MIDinitiation==1 & cruisea==1
```

```
list ISO3let1 ccode1 ccode2 ISO3let2 year if MIDinitiationfit>=.0004729 &
MIDinitiation==1 & cruisea==0
```

The commands used to complete the Hausman Specification Test to determine if fixed or random effects is appropriate:

```
xtlogit ICBchallenge cruisea cruiseb BallisticMissilea BallisticMissileb nucleara nuclearb
distance contig PowerParity MajorPowera jointdemocracy pcysr pcysr2 pcysr3, fe
```

```
estimate store fe
```

```
xtlogit ICBchallenge cruisea cruiseb BallisticMissilea BallisticMissileb nucleara nuclearb
distance contig PowerParity MajorPowera jointdemocracy pcysr pcysr2 pcysr3, re
```

```
estimate store re
```

```
hausman fe re
```

```
xtreg MIDinitiation cruisea cruiseb BallisticMissilea BallisticMissileb nucleara nuclearb
distance contig PowerParity MajorPowera jointdemocracy pcysr pcysr2 pcysr3, fe
```

```
estimate store fe
```

```
xtreg MIDinitiation cruisea cruiseb BallisticMissilea BallisticMissileb nucleara nuclearb
distance contig PowerParity MajorPowera jointdemocracy pcysr pcysr2 pcysr3, re
```

```
estimate store re
```

```
hausman fe re, sigmamore
```

The commands used to test multicollinearity using a covariance matrix:

```
probit ICBchallenge cruisea cruiseb BallisticMissilea BallisticMissileb nucleara nuclearb
distance contig PowerParity MajorPowera jointdemocracy pcysr pcysr2 pcysr3, robust
cluster (dyadid)
```

```
estat vce
```

```
logit ICBchallenge cruisea cruiseb BallisticMissilea BallisticMissileb nucleara nuclearb
distance contig PowerParity MajorPowera jointdemocracy pcysr pcysr2 pcysr3, robust
cluster (dyadid)
```

```
estat vce
```

probit MIDinitiation cruisea cruiseb BallisticMissilea BallisticMissileb nucleara nuclearb
 distance contig PowerParity MajorPowera jointdemocracy pcysr pcysr2 pcysr3, robust
 cluster (dyadid)

estat vce

logit MIDinitiation cruisea cruiseb BallisticMissilea BallisticMissileb nucleara nuclearb
 distance contig PowerParity MajorPowera jointdemocracy pcysr pcysr2 pcysr3, robust
 cluster (dyadid)

estat vce

probit ICBchallenge lacma lacmb BallisticMissilea BallisticMissileb nucleara nuclearb
 distance contig PowerParity MajorPowera jointdemocracy pcysr pcysr2 pcysr3, robust
 cluster (dyadid)

estat vce

logit ICBchallenge lacma lacmb BallisticMissilea BallisticMissileb nucleara nuclearb
 distance contig PowerParity MajorPowera jointdemocracy pcysr pcysr2 pcysr3, robust
 cluster (dyadid)

estat vce

probit MIDinitiation lacma lacmb BallisticMissilea BallisticMissileb nucleara nuclearb
 distance contig PowerParity MajorPowera jointdemocracy pcysr pcysr2 pcysr3, robust
 cluster (dyadid)

estat vce

logit MIDinitiation lacma lacmb BallisticMissilea BallisticMissileb nucleara nuclearb
 distance contig PowerParity MajorPowera jointdemocracy pcysr pcysr2 pcysr3, robust
 cluster (dyadid)

estat vce

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