Proposal for a Thesis

In the Field of International Relations

In Partial Fulfillment of Requirements for

The Master of Liberal Arts Degree

Harvard University

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Gina Granados Palmer

address

City, State, Zip

Phone number

email address
I.

Tentative Title

I propose to title my thesis: 30 Days to Destruction:

Data-driven evaluation of Japanese resolve, US Naval perspectives on WWII persistence & termination, and Truman’s decision to drop the bomb,

July 9th - August 9th, 1945

II.

Research Problem

In today’s quickly expanding technology landscape including drones, tactical nukes, and terrorism, questions surrounding why wars terminate or persist are questions that demand careful thought and consideration drawn from all perspectives -- whether theoretical or practical, realist-rationalist or constructivist, traditional or contemporary.\(^1\) Fighting persistence and termination are universal problems encountered as part of any conflict. Indeed, from the war-fighting perspective, killing methods constantly evolve in order to gain technological advantage, destroy enemy resistance and resolve, and induce surrender.

Several fields of study have approached the puzzle of war termination from different perspectives, including just war theory, comparative approaches to war history, rational bargaining theory, organizational theory and behavioral theory. All of these fields overlap to offer key insights that merit exploration. Rational bargaining theory in particular attempts to provide a mathematical means of not just explaining but predicting persistence and termination behavior. Of specific interest to this paper, rational bargaining theorists such as Robert Powell

\(^1\) The author is indebted to the foundational frameworks, coursework and guidance of Harvard Professors Muhammet Bas, Joe and Doug Bond, Donald Ostrowski and Beth Simmons, who have directly and indirectly influenced the thinking and analysis in this study.
have re-approached the puzzle of war termination and persistence by examining resolve and persistence in relation to fighting costs and power shifts. Powell analyzes conditions that might cause a rational state leader to persist fighting despite a diminished capacity to fight, payoffs that favor termination rather than persistence, and a high probability of losing.  

Rational bargaining theories are notoriously difficult to test due to a lack of applicable data. In researching for this study, I have identified a relatively untapped source of information with contributory potential for quantitatively testing bargaining theories while in parallel enriching the historical debate concerning Truman and the bomb. The Nimitz Graybook, recently declassified and published in 2013, contains a wealth of World War II military data on the destruction of Japan’s air, sea and land forces. The Graybook also contains diplomatic, strategic qualitative information as communicated from Allied and Axis nation-state leaders to US leaders of forces on the ground. Development of these daily records into a database can extend the information available to scholars and researchers interested in testing rational bargaining and other theories requiring correlated location, temporal, and war-fighting capacity data. This paper aims to use the Nimitz Graybook to develop a Graybook database and test Powell’s persistence theories as applied to the 30 days before the dropping of the bombs in Japan near the conclusion of World War II. The focus is to bridge theory and application by exploring the data from a practitioner viewpoint. This case study will use details regarding Japanese...

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3 Dan Reiter, "Exploring the Bargaining Model of War," *Perspective on Politics* 1, no. 1 (2003). This study consults Reiter’s excellent overview of Rational Bargaining Theory literature and recommendations for extended research. He lists specifics of why bargaining models are difficult to test and indicates the need for quantitative small studies for testing and application.

4 Special thanks are due to Naval War College (Newport, Rhode Island) Professors Gene Andersen, Tim Demy and Olenda Johnson and NWC Maritime Historian John Hattendorf for their advice and guidance. Especially Professor Tim Demy, who provided many references in regard to military technology, leadership and ethics and also suggested the Nimitz Graybook and gave valuable direction with regard to US Naval strategic decision-making.

persistence and the termination of fighting in World War II in hopes of finding data that not only test Powell’s persistence theories, but also identifies patterns of behavior that broadly extrapolate to application across the complex landscape of international conflict still occurring today. Understanding why opponents persist in fighting can help us understand how to use bargaining to end conflict more quickly -- or to avoid it all together.

Regarding the historical context, International Relations study of World War II and the nuclear events at Hiroshima and Nagasaki are extensive, yet there is no consensus regarding the necessity of dropping the atomic bombs, the motivations behind US and Japan decision-making, or the main catalyst causing Japanese surrender. This case study potentially helps to answer some of these key questions contributing to both Traditional and Revisionist sides of the debate by conducting mixed-method research along two parallel tracks: A) Qualitative exploration of historical questions; and B) Data-driven exploration toward testing or applying Powell’s rational bargaining theories involving persistence:

1. What are the relationships between and among war-fighting capacity, resolve, persistence, and termination? In this case study’s historical context, how did these factors influence Truman’s decision to use the new technology of the bomb? This case study focuses initially on the 30 days prior to the dropping of the second bomb on Nagasaki, the window from July 9th-August 9th, 1945, as this period and the first use of the atomic bomb by the Allies present a major turning point in nation-state leader decision-making involving new technology, new rules-of-engagement paradigms and consideration of the relationship of the above factors to induce unconditional surrender and decisively terminate war.
2. Various US Navy flag officers argued that the use of the bombs in Hiroshima and Nagasaki was unnecessary because Japan’s war-fighting capacity was destroyed, and, therefore, their resolve was quickly diminishing into eventual and probable surrender. This study will use the data in the Nimitz Graybook to estimate extents to which land, sea and air capabilities were destroyed -- and, as an extension, measure war-fighting capacity and resolve in each of these three military components. Qualitative accounts will also be examined for additional facts and opinions that informed Truman’s evaluation of Japan’s resolve to continue fighting rather than surrender.

3. Is Powell's persistence theory applicable and predictive in the context of rational bargaining between Truman and Japan in the context of this historical case study? Is the Graybook data useful as test data in the context of testing and extending Powell’s theories?

4. Although an intensive study of organizational theory is outside the scope of the study, this paper considers the question: how does organizational theory apply to this case study’s Allied-Japan dynamic? What rational unitary actor assumptions can be made regarding the nation-state of Japan as an oligarchy with strong military organizations? How do the component organization capacity and resolve variables factor into Japan's total capacity and resolve decisions for and against surrender?
**Hypothesis 1:** Truman’s assessment of fighting persistence and the need for the bomb to induce surrender was in large part based on evidence of Japan’s land or army component of resolve.

- **Condition 1a.** Japan leadership cannot be considered a unitary rational actor. Japanese total resolve is organizational in nature and must be assessed as the sum of component resolves of each leader organization -- oligarchic, military and domestic. Estimating rational unity is necessary for understanding resolve and persistence.

**Hypothesis 2.** Primary source data and analysis will support positive correlations among fighting capacity, resolve, and persistence. Testing of Powell’s persistence theory will show that his ideas are extensible and applicable to war termination in the case of World War II Japan and generalizable to modern day conflicts.

This research paper will explore the relationships between fighting capacity, resolve, persistence, and termination. The qualitative portion of the study builds on historical discourse, debate and application of Just War Theory\(^6\) while the quantitative portion draws from Rational Bargaining Theory and incorporates aspects of Organizational Theory.\(^7\) Data will include secondary sources and recently exposed primary sources, which will facilitate comparison of a timeline of events to a 30-day database of geographic, temporal and land, sea, air data compiled from the Nimitz Graybook. New primary sources will include transcribed first-person interviews of US Naval flag officers, maps, data and personal papers of US Naval Admirals Halsey, Nimitz, King, and Spruance.

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\(^7\) Reiter, "Exploring the Bargaining Model of War."
This study hopes to contribute to international relations study and practice related to collaboration, conflict avoidance, and conflict resolution by providing a unique, small-study means of testing conflict theories. It also hopes to contribute to rational bargaining and historical discourse by testing and building upon Powell’s persistence theories and relating specifics to debates regarding Allied and Japanese decision-making at the end of the Second World War.

In the application of specifics to this case study, I will produce a unique Graybook Database, July-August 1945. I will use the Graybook Database to produce case study geographic mappings relating visual data -- including location, land/sea/air/total war-fighting capacity (both US and Japan), discrimination data (percentage civilian versus military resident) and resultant measures of persistence. Beyond the scope of this paper, my studies may eventually expand the range of the Graybook Database beyond the 30 days to include the entirety of Nimitz’ seven volumes of Graybook data, spanning his tenure in naval command during WWII. I will seek compatibility with established databases such as the Correlates of War (COW) data sets.\(^8\) I will also produce the “30 Days to Destruction” case study, which will serve as a first means of applying the Graybook Database to gauge its usefulness as a contribution to testing current theories from a rich Naval data source that may be verified through additional perspectives, individual, Navy, US and otherwise.

III.

Key Questions and Terms

*Correlates of War (COW):* The Correlates of War (COW) Project facilitates the “collection, dissemination and use of accurate and reliable quantitative data in international relations.”

*capacity* (aka fighting capacity, war-fighting capacity): A derivative measure of the US Department of Defense definition of military capability. Capacity in this study is the “ability to achieve a specified wartime objective” (in this case, to continue war-fighting). Capacity uses two components of the DoD military capability definition: force structure and readiness; where force structure is “numbers, size and composition of the units that comprise” military forces (whether land, sea or air), and force structure is assumed to be unit ready. Readiness is “the ability of each unit to deliver the outputs for which it was designed.”

*persistence* (aka persistent fighting,) – A measure of the tendency to continue fighting (in conflict, including war) rather than terminate fighting. Powell’s theory links this tendency to shifts in the distribution of power and argues that persistent fighting (from now on referred to as “persistence”) is often accompanied by the lack of serious bargaining.

*resolve* – In alignment with Powell’s theories, resolve is defined as “the maximum risk of disaster that [an opponent] is willing to run in order to prevail.”

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11 Powell expands upon this established definition of resolve by arguing that maximum risk is also the same level of risk at which the opponent is indifferent between surrender and continuing to gamble on winning, placing an upper limit to how many times the opponent will escalate, (or how long they will persist fighting). Note: Powell analyzes at the state level, while this study shifts focus to the leader level of analysis and makes the assumption that Powell’s theories still apply as the bargain occurs between rational unitary actors.
termination (aka fighting termination, war termination) – The end of fighting, where fighting activity has ceased and no longer recurs for a significant amount of time. The definition of how much time must pass before fighting recurs varies according to different studies and efforts. For purposes of this study, termination will be qualitatively defined as the time at which Japan’s Emperor Hirohito formally surrendered unconditionally. In the context of persistence theory, termination will be quantitatively defined as the point at which persistence is sufficiently close or equal to zero.

IV.

Research Design: Worldview, Strategy of Inquiry, Background and Overall Methodology

This research paper uses rational and constructivist worldviews to examine and explore the complexities of leader decision-making and fighting persistence and termination in both theory and practice. While I seek to build upon existing discourse in the just war theory, war history, rational bargaining theory, organizational theory and behavioral theory, I will initially focus on a single case study using a mixed-method approach.

The strategy of inquiry is to simultaneously research primary and secondary sources in World War II discourse and literature with parallel research in US Naval narratives and rational bargaining theory. Primary sources will include the Potsdam papers, which focus on events and decision-making from the leader perspective, including Truman, Churchill, and Stalin (see

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13 Powell, "Persistent Fighting and Shifting Power."

14 Potsdam Conference Documents, ed. Harry S. Truman and President United States (Frederick, Md.: University Publications of America, 1980).
Figure 1.1, below). I will focus on Truman, specifically with his assessments of Japanese war-fighting capacity and persistence prior to deciding to use the bombs at Hiroshima and Nagasaki. This paper is unique from other approaches in that I will also use US Naval data and accounts which -- as a parallel organizational arm to Japanese land, sea and air forces – directly informed Truman with regard to causing Japanese surrender and decisive war termination.

**Background for Hypothesis 1**

**Hypothesis 1:** Truman’s assessment of Japanese persistence and the need for the bomb to induce surrender was in large part based on evidence of Japan’s land (or army) component of resolve.

Primary source data and analysis of Japanese land, sea and air capacity and persistence will support Traditionalist arguments that the Allied leaders decided it was necessary, in part, to use the new technology of the bomb to decrease Japan’s total resolve to induce surrender and terminate fighting. Evidence will also support US Navy leader arguments that Japanese sea and air capacity was extremely diminished, and therefore Truman’s assessment of fighting persistence and the need for the bomb to induce surrender was in large part based on evidence of Japan’s land or army component of resolve.

Historical debate centering on the subject of Truman’s decision-making and the “necessity” of dropping the bombs on Hiroshima and Nagasaki generally divides into two camps: Traditional and Revisionist.15 Both approaches generally examine the leader level of

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decision-making, assuming that Truman and Japanese Emperor Hirohito are rational unitary actors. Revisionists and Organizational Behaviorists argue that leader level analysis is flawed, as Japan’s leadership at the time was far from unitary. Leon Sigal, in his definitive work on the analysis of this topic from the organizational perspective, defines Japan’s organizational motivations as disparate and not unitary under Emperor Hirohito (or the Palace) (refer to Figure 1.1, below):\textsuperscript{16}

\begin{figure}[h]
\centering
\begin{tabular}{|l|p{10cm}|}
\hline
\textbf{Organization} & \textbf{Motivations} \\
\hline
Palace & Organizational essence (preserve the throne) \\
& Capability (no punishment of emperor) \\
Army & Morale (peace with honor; orderly surrender, self-disarmament, limited occupation, right of supreme command, limited cession of seized territory) \\
Navy & Autonomy (no unification) \\
& Capabilities (preserve surface fleet, naval aviation) \\
& Roles and missions (“special attack” forces) \\
Foreign Ministry & Organizational essence (preserve essential mission of negotiations by avoiding lead role in unsuccessful negotiations) \\
& Autonomy (preserve and restore freedom of action in conduct of reporting and negotiating) \\
\hline
\end{tabular}
\caption{Sigal organizational breakdown of Japanese World War II interests}
\end{figure}

The following section builds on these organizational considerations by defining a measure of rational unity and disaggregating factors such as capacity and resolve into subunits.

Background for Condition 1a

Condition 1a. Japan leadership cannot be considered a unitary rational actor.

Japanese total resolve is organizational in nature and must be assessed as the sum of component resolves of each leader organization -- oligarchic, military and domestic.

Estimating rational unity is necessary for understanding resolve and persistence.

Rational bargaining theory provides an additional level of complexity to the debate.

James Fearon’s seminal work in the field frames conflict as a bargain between unitary rational actors who will choose to terminate fighting when the payoff for surrender is equal to or greater than the cost of persisting. This study defines a simple estimate of rational unity, where Truman’s unity is assumed as equal to 1, and Japan’s rational unity is much less than 1 (codified as some percentage between 0.0 and 0.9). Explorations, then, of Powell’s rational bargaining theories may be made with different unity assumptions. Qualitatively, I assume that Allied Power decision-makers Truman, Churchill and Stalin compose a tripartite of unitary rational actors, each of which can be assessed as having a unity equal to 1 in any rational bargain between any two parties. Thus, the leader level of analysis is best approached as interaction between an Allied tripartite of unitary rational actors and Japan as an organization of unitary rational actors:

Figure 1.2 - Levels of Analysis - including Leader (rational actor) level, where Truman is a unitary rational actor for the US (with Churchill and Stalin in a US, British and Russian tripartite of unitary rational actors) and Japan’s rational unity is much less than 1 (with Emperor Hirohito acting as a spokesperson within an organization of unitary rational actors requiring consensus among key party heads)

I assume Truman is a unitary rational actor who is influenced by the advice and political maneuvering of Churchill, Stalin and US land, sea and air leaders, but ultimately makes the decision to drop the bomb with singular authority. Japan, in contrast to this tripartite of singular actors, acts as an organization of unitary rational actors. Thus, the bargaining process is complicated by Emperor Hirohito’s inability to accept a bargain and commit to surrendering without the agreement of each of Japan’s land, sea and air unitary rational leaders. Thus, it makes sense that complementary US land, sea and air military components and analysis of each fighting arm’s capacity as compared to Japan’s land sea and air military components are key factors in Truman’s assessment of Japan’s total resolve or total persistence.
Background for Hypothesis 2

**Hypothesis 2.** Primary source data and analysis will support positive correlations among fighting capacity, resolve, and persistence. Testing of Powell’s persistence theory will show that his ideas are extensible and applicable to war termination in the case of World War II Japan and generalizable to modern day conflicts.

In his work on “Nuclear Brinkmanship with Two-sided Incomplete Information,” Powell uses estimations of resolve in modeling brinkmanship in the context of nuclear confrontation. His analysis includes US and rogue state resolve, and uncertainty on both sides about the other side’s resolve. Any decision by the opponent state to resist or back down is then based on bargaining bids and the two factors or resolve and uncertainty. In his work on “Persistent Fighting and Shifting Power,” Powell analyzes persistent fighting in the context of interstate and civil war, observing that fighting can occur or resume when power shifts rapidly and deals can be cut to end fighting when the distribution of power shifts slowly or is stable.

As a test of Powell’s theories, I will apply this analysis of resolve in the context of WWII Japanese resolve using the Graybook 30-day data by codifying resolve using the historical land, sea and air capacity numbers to trace and verify a resultant measure of resolve, progressing from Day 1 to Day 30. Along with qualitative assessment, this specific testing will demonstrate whether Powell’s brinkmanship model applies in the context of forcing Japanese surrender using Allied forces near the conclusion of WWII and provide some additional insight as to why Truman thought the use of the bomb was necessary. As research progresses, I expect to find other models in addition to those of Powell that may also be useful to test in the future or ways in

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19 "Persistent Fighting and Shifting Power."
which these theories are extensible and generalizable to modern day conflict. I also hope that this preliminary testing can help to evaluate the relationships between and among capacity, resolve, and persistence and extend opportunities for researchers to expand upon rational bargaining theories such as Powell’s in order to better understand why fighting persists or ends.

**Research Method Specifics**

Relatively untapped US Naval primary sources will include the Nimitz Graybook and first hand accounts and papers in the archives at the Naval War College in Newport, Rhode Island. Secondary sources will include existing WWII discourse and may also include interviews with living relatives of US Naval flag officers, biographers, and historians.

I am currently researching as a Leadership & Ethics Fellow at the Naval War College (NWC) in Newport, Rhode Island, and will be relying on the continued cooperation of resident research associates and professors, including but not limited to Dr. Tim Demy of the College of Strategic Leadership and John Hattendorf, NWC Maritime Historian. Other NWC sources include individuals responsible for the curation and release of the Nimitz Graybook, first hand accounts related to other US Naval Admirals in service under Truman in the period in question, and other related US Naval war records. My research will be structured as follows:

1) **Build the initial 30-day Graybook Database:** Extract date, time, location, Japanese land fighting capacity, Japanese sea fighting capacity and Japanese air fighting capacity data from the Nimitz Graybook and build that database in ArcGIS.  

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20 The author will utilize available hardware and software sources at Harvard’s Center for Geographic Analysis, which have been made available due to completion of a GIS seminar project temporally mapping state failure and fragility prediction data. For an introductory overview of how ArcGIS applies to military data, see “Arcgis Defence Solutions Allow Decisions to Be Executed More Precisely,” *Military Technology* 32, no. 1 (2008).
2) **Build 30-day Truman decision-making event timeline:** Extract historical information from Graybook, Potsdam papers, and other primary and secondary sources and place critical events in temporal comparative perspective.

3) **Examine and Explore data:** analyze measures of Japanese fighting capacity and resultant evaluations of resolve and persistence as posed by US Naval leaders as advisers to Truman using ArcGIS visual inspection of the Graybook data. Look for data significance and relationships between location, temporal and capacity variables. Use Powell’s bargaining and persistence theories as a starting point for estimations of resolve/persistence and relationships between variables.

4) **Compare data results to historical discourse:** focus on Truman’s complex decision-making process at the leader level as advised by US Naval and other leaders (with Japan acting as a unitary organization with sub-leaders). Use Graybook capacity data and quantitative measures of resolve and persistence to support or refute historical estimations by US Naval leaders and Truman of Japanese resolve/persistence in calculus of necessity to drop the bombs in Hiroshima and Nagasaki.

V. **Research Limitations**

Research for this study will be limited to the time period of 30 days, from July 9th to August 9th, 1945. I will not include in my research the extended period after August 9th, 1945 in which the termination of World War II had not cleanly taken place and partial fighting by various land, sea and air organizations continued before complete and total surrender. I will

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focus primarily on factors weighing into the decision to drop the bombs on Hiroshima and Nagasaki. I will not include the effects of the bombings on the Japanese people and as assessed in the US and internationally by global civil society. These are important aspects in the continuum of history and world war that merit individual exploration on their own and are topics that indicate how this case study may be expanded in future efforts. The long arc of historical background, the causes of World War II commencement, rules of engagement during conflict – these are as important to study as the why the war ended. Indeed, it is impossible to understand truly war persistence and termination outside of the context of the historic continuum.

Concerning the specifics of land, sea and air data residing in the pages of the Nimitz Graybook, this case study will assume that the recorded figures are relatively accurate. This study will not include second source verification of US Navy accounts using US Air Force, US Army or non-US Navy international sources. Although initial establishment of the Graybook Database will likely prove useful for exploratory analysis, it may not be possible to conclusively verify Powell’s resolve and persistence theories (they may not be extensible or may be too wide in scope for this study). It is expected that the initial questions and hypotheses posed in previous sections of this proposal will narrow in scope and change in nature as the database is established.

VI.

Conclusion

Despite possible reduction of scope from a quantitative analysis of Powell’s theories to an exploratory establishment of the Graybook Database without applying the data to a specific set of theories – I expect the outlining of assumptions and preliminary testing to show the
usefulness of such a database to offer an additional source that is more granular in nature than qualitative study alone.

There is a rich history of interweaving accounts and information that I hope to help verify or refute by adding a daily and visually detailed accounting to be used as an open resource by historians, theorists and interested global citizens. My hope is that the Graybook Database will be used as a source to extend discourse past conjecture and helps researchers to test their theories (bargaining and otherwise). In conjunction with application of the database to the case study, the 30-day Graybook database should allow theorists and historians to dig deeper into the causes of relationships between factors such as fighting capacity and war termination.
VII.

**Tentative Schedule**

Submit first draft of proposal to Research Advisor (RA)..........................April 30, 2015

Proposal returned for revision.................................................................August 30, 2015

Submit second draft of proposal ..............................................................July 30, 2015

Proposal accepted by Research Advisor (RA)........................................August 5, 2015

Thesis Director (TD) agrees to serve.........................................................August 31, 2015

Complete and submit first draft...............................................................October 31, 2015

TD returns first draft for revision...............................................................November 30, 2015

Complete revisions and submit second draft..............................................January 20, 2016

TD returns second draft for revision.........................................................February 15, 2016

Final draft delivered to TD and RA..........................................................April 1, 2016

Final draft approved..................................................................................April 30, 2016

Delivery of bound copy............................................................................May 15, 2016

Graduation.................................................................................................May 2016
VIII.

Working Bibliography

Selected Works Cited


*Potsdam Conference Documents* edited by Harry S. Truman and President United States Frederick, Md.: University Publications of America, 1980.


**Works Consulted**


Recently declassified, digitized and released in 2013, the Graybook is presented in eight volumes. From the attack on Pearl Harbor on December 7th, 1941 to August 31st, 1945, US Naval staff in the Pacific under Admiral C.W. Nimitz kept a running estimate of Japanese land, sea and air resources which were used by US Naval flag officers and presidents in order to evaluate the daily state and capabilities of the Japanese fighting force.


**Works to be Consulted**

Archives, Manuscripts Oral Histories in the Naval Historical Collection, including the personal papers of Admiral Spruance, Admiral King and staff. Newport, Rhode Island: Naval War College Archives, 1945.


Leahy, William D. *I Was There the Personal Story of the Chief of Staff to Presidents Roosevelt and Truman Based on His Notes and Diaries Made at the Time*. New York: Whittlesey House, 1950.

Rosenberg, David. Interview by Palmer, Gina. Interview regarding Rosenberg’s biography on Admiral Burke, location and date TBD.