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LEARNING ABOUT MILITARY EFFECTIVENESS:
EXAMINING THEORIES OF LEARNING DURING THE RUSSO-JAPANESE WAR

By

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Abstract of the Dissertation

Learning about Military Effectiveness:

Examining Theories of Learning During the Russo-Japanese War

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This dissertation tests the relative effectiveness of the Bayesian rational choice, bureaucratic interest, cognitive psychological, and ideational research programs in explaining how observers draw conclusions from the experience of others. I examine the conclusions reached by members of the armies and navies of Germany, the United Kingdom, and the United States about the effectiveness of certain military and naval tactics and armaments during the Russo-Japanese War of 1904-1905. Drawing on the primary source material generated by accredited observers, official military histories, and professional publications of military officers, and employing learning hypotheses generated by the four contending research programs, I am able to draw conclusions about the use of these research programs for scholars seeking to understand the process and outcomes of vicarious learning.

The results of these tests indicate that the ideational research program, which emphasizes culturally constructed and shared heuristics and ideas, is able to explain the most variation in the conclusions drawn by these observers and commentators about the Russo-Japanese War. The bureaucratic interest based approach does an extremely poor job of explaining these same outcomes. Both the Bayesian rational choice and the cognitive psychological model show mixed success. While they are each able to demonstrate some explanatory value, they fail to predict important aspects of the learning experience. The ideational approach explains all that is explained by the other research programs, as well as much that the other approaches left unexplained.

Preface and Acknowledgements

The familial roots of this project run deep. A debt is owed to my family: Lillian Vacca who taught me the enduring importance of national culture, Captain Angelo Vacca (USN) who taught me at a young age about Mahan, battleships, and Janes', Dr. Gabriel Ceci and Professor Robert Vacca who demonstrated the excitement of advanced education, and especially Mary Ceci, who taught me the wonders of old books and provided the resources for my education.

Very special thanks are owed to my parents, William J. and Mary Antoinette Vacca, who deferred their own compensation and savings to provide for their children and give them the opportunity to go as far as talent could take them.

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I received tremendous assistance in obtaining copies of the primary source materials used in this project. I am indebted to the library staff at the Combined Arms Research Library at Fort Leavenworth Kansas, the Library of Congress, the Widener Library at Harvard, and the Golda Meir Library and the Institute of World Affairs at the University of Wisconsin, Milwaukee. Of course, when pursuing a historical topic, a good bookseller can help where some libraries cannot. My thanks go to Chartwell Booksellers (New York), the Strand (New York), Maggs Brothers (London), alibris.com, amazon.com, biblio.com, and abebooks.com.

Most corporations value narrow technical expertise leavened by a few MBAs. Northrop Grumman, perhaps because of its heritage as the innovative maverick among defense firms (from its early experiments with the flying wing, through the B-2 Stealth Bomber, to today offering the most capable USAF Tanker, the KC-45A), is a rare firm that values talent over credentials. A firm that encourages rigorous, critical, multidisciplinary inquiry on vexing problems of business strategy has advantages over its peers. I owe a special debt of thanks to my management, who encouraged me to finish this degree. This includes three Northrop Grumman Vice Presidents who combine patriotism, technical sophistication, intellectual curiosity, and business acumen: Chip Pickett, who hired me and challenged me to think rigorously about detailed military issues; Mark Ureda, who saw that I had the flexibility to take this project to completion; and especially Bob Nelson, who took it upon himself to collect, promote, and protect bright eclectic people with a lot to contribute to the US Defense Industry.

Among my colleagues at Northrop I would especially like to call out Ed Dizon (Rutgers 1985), who stands as a true friend and professional role model; John Marshall, who talked through this entire project with me on a daily basis; and Mark Davidson, for his insight into Alfred Thayer Mahan and especially Sir Julian Corbett. I would also like to thank Dr. Rob Mullins for taunting me mercilessly with his finished degree.

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Mr. Charles T. Munger's lucid exercises in "Socratic Solitaire" were extremely insightful. Berkshire's gain is academia's loss. John Derbyshire's blogging about writing while he completed his own book provided a constant moving target for my own efforts. But for Paul Johnson's timely explication of the Rhino Principle, this would still be a collection of notes¹.

The typing of a dissertation and the reading of old books and new articles are lonely acts. My thanks go out to those who made this task less lonely: The Gathering, Giant Squid, Paradise Lost, Within Temptation, Therion, Lake of Tears, Anathema, George Formby, Bix Beiderbecke, and Agua de Annique.

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¹ Paul Johnson, "The Rhino Principle," *Forbes* 177:2 (30 January 2006) page 31

Dedication

For Jarmila and Mary

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Introduction

Forecasts may tell you a great deal about the forecaster; they tell you nothing about the future².

While understudied, learning theory lies right at the heart of a number of important political science questions. Effective learning is often presupposed in political science and international relations investigations that involve ongoing interactions, such as rivalries, negotiation, arms races, and dynamic calculations of the balance of power. The rational model of learning, formalized as Bayes' Theorem, underpins the mathematics of game theory in cases of uncertain information. A diverse set of political science literature cites "failures to learn from" specific historical events as the explanation of events as diverse as the outbreaks of World War, presidential candidate selection, weapons acquisition, taxation, and tariff policy. Beyond the literature in the discipline, popular literature is resplendent with references to failed and successful examples of learning from events.

Much of the literature jumps to some of the more exciting questions, namely exploring what explains seemingly "failed" learning, and what explains the failure of seemingly "correct" learning experiences to be translated into correct policy. This can be somewhat unsatisfactory, as important foundational questions are left unexplored under the assumption that the truth was available for the taking and that it was consciously or unconsciously ignored. For example, Lebow and Stein, in their discussion of the Cuban Missile Crisis, write "Leaders on both sides should and could have drawn important policy conclusions from their failure to prevent a crisis under these conditions. Yet they did not learn some of

² Warren Buffett, "1980 Annual Report to Shareholders" (Berkshire Hathaway Incorporated, 1981)

the obvious lessons from their failure, and the conclusions that they did draw were either incomplete or wrong. One obvious lesson that leaders should have learned was...’’³.

In this dissertation I ask a more fundamental question than much of this literature, while trying to avoid debates about the objective nature of truth. Concepts of success and failure in learning presuppose the existence of a demonstrated objective truth. Such a notion is inherently problematic⁴. I seek to understand what explains the lessons that are *drawn* by different observers from the same ongoing stream of event data, be they correct, erroneous, superfluous, or indeterminate.

This dissertation focuses explicitly on vicarious learning, i.e., how individuals draw lessons from the experiences of *other* individuals and organizations. Much of the existing political science literature focuses on direct learning from one’s own experience⁵. Often analysis looks at variation in a single unit across time, such as Germany’s learning from its own experience during the First World War, but rarely does it look across different units⁶. However third party learning offers much more data for the analyst.

³ Richard Ned Lebow and Janice Gross Stein, *We All Lost the Cold War* (Princeton University Press, 1994), page 282.

⁴ Even if one believes in the positivist notion of objective truth, there is still the problem of that truth being definitively exhibited in one or more complex and multifaceted events.

⁵ Scott Sigmund Gartner, *Strategic Assessment in War* (Yale University Press, 1997); D. Michael Shafer, “The Unlearned Lessons of Counterinsurgency,” *Political Science Quarterly* 103:1 (Spring 1988) pages 57-80

⁶ Studies of innovation on Germany, for example, discuss how Germany learned from the German experience in World War One, but not about what lessons they drew (or ignored) from the experiences of other belligerents (including the victors). James S. Corum, *The Roots of Blitzkrieg: Hans von Seeckt and German Military Reform* (University Press of Kansas, 1994).

Warfare is, happily, a relatively rare occurrence. Thus nations that want to learn about evolving patterns of warfare are far more likely to analyze vicarious data, rather than be exposed to first hand data. Outside of warfare, a number of the phenomena most of interest to social scientists, such as economic cycles, crisis diplomacy, coalition government formation, economic development, industrialization, and irredentist conflict are all relatively infrequent, yet political scientists create generalized theories in order to explain these events. Ideally policymakers at any current time should be able to use political science findings to draw appropriate lessons and guide behavior. Indeed, one of the central tenants in social science generally is that the study of specific events dispersed across time and space allows us to draw general broadly applicable lessons that can be applied to specific current and future problems⁷. While social scientists receive training to guide their study and analysis of events, most people do not. Yet the ability to draw appropriate lessons from historical experience is critical to notions of humanity's progress. How much confidence can we have in individuals' ability to learn from the experience of others? And, if there are deficiencies in such learning, what explains this imperfection?

To address these questions I explore the German, British, American, and, to a lesser extent, French attempts to draw lessons from the Russo-Japanese War of 1904-1905. While a somewhat obscure war for today's scholars, this war was the first major conflict in which new technologies and tactics of land and naval warfare were used by both belligerents.

⁷ Alexander L. George, *Bridging the Gap: Theory and Practice in Foreign Policy*, (US Institute of Peace, 2003); Warren Samuels, and Jeff E. Biddle "On the Attribution of Causality and Responsibility in Macroeconomics," in Samuels (editor) *Essays on the Methodology and Discourse of Economics* (New York University Press, 1992); Donald E. Stokes, "Basic Inquiry and Applied Use in the Social Sciences," in Ada W. Finifter, *Political Science: The State of the Discipline* (American Political Science Association, 1983); Fred M. Frohock, *Normative Political Theory* (Prentice Hall, 1974).

Consequently, the neutral Great Powers devoted substantial resources to drawing as much information as possible from this event. The four countries covered in this dissertation each sent professional military officers as formal observers to the Russian and Japanese General Staffs and to the field units. There they were given unprecedented real time access to events, and, after suitable delays, their reports were transmitted back to their home government. In addition, the observing militaries used these first hand reports, as well as other public data from the press, the belligerent militaries, and the observers from other nations, to compile official histories. These histories, as well as the raw data, were further used in professional doctrinal debate prior to the First World War. Even after the searing experience of 1914-1918, the professional military literature continued to discuss the lessons and experience of the Russo-Japanese War through the 1930s. The rich literature provides the raw data on which to test multiple contending explanations for learning.

My epistemological approach is explicitly positivist and Lakatosian⁸. I am positivist, as this dissertation relies on the cumulative weight of various theories when stressed by efforts of falsification, and I believe that taking a measured scientific approach in the deduction and test of hypotheses will provide insight into the comparative veracity of the theories.

I am also Lakatosian, because I do not seek to discredit any theory through a single critical test, but instead hope to show which contending theory brings the most explanatory leverage to the research question. I fully expect that there will be some data that are at least partially consistent with every theory. Through the application of logic and a rigorous review of

⁸ Imre Lakatos, "Falsification and the Methodology of Scientific Research Programmes," in Imre Lakatos, and Alan Musgrave (editors) *Criticism and the Growth of Knowledge* (Cambridge University Press 1970)

empirical data, the relative explanatory power of these contending research programs should be established. Some theories will find more support than others. Furthermore, some theories will have to go through less reformulating gymnastics, those *ad hoc* qualifications within the variable belt surrounding the core assumptions of the research program, to explain findings. The parsimony of the contending research programs, as well as their raw explanatory power, can be compared to determine the efficiency of the explanation.

The research design for this dissertation will proceed as follows. In the first chapter I will derive a set of general propositions from the unitary rational, general cognitive psychological, bureaucratic, and ideational research programs as applied to learning. Two of these theories, the rational and the cognitive, are explanations in their own right, as well as microfoundations for variants of the bureaucratic and ideational explanations. Rational models are predicated on the application of Bayes' theorem for the regular updating of beliefs and confidence in those beliefs as new data are considered. Cognitive psychology offers an alternative explanation, highlighting predictable deviations from rationality based on chronological or geographical distance, previous exposure to idiosyncratic data, and cognitive miscalculation of the Bayesian formula. Bureaucratic theories can be formulated with rational choice foundations, or they can be formulated through psychological bias causal mechanisms. Both formulations are distinguishable using certain tests. Ideational explanations are largely based on cognitive microfoundations, but they privilege certain cognitive heuristics over others, and generate distinctive predictions, which, unlike the pure cognitive model, imply a path dependency based on the shared historical experiences and references of certain cultural groups. These theories generate a series of contradictory propositions about different reactions to event data.

In the second chapter these general propositions will be refined to make specific predictions about a number of beliefs about the nature of military operations and tactics during and after the Russo-Japanese War. In order to accomplish this refinement it is necessary to understand a bit about the technological, doctrinal, and political debates that raged in the militaries of the industrializing Great Powers. In the second chapter there will be a discussion of factors relating to surprise, artillery tactics, infantry tactics, supply capacity, and the interplay between naval and ground campaigns within modern warfare. I will also discuss the purely naval matters of capital ship armament, design, and vulnerability. These points provide numerous areas of high saliency for military and naval officials and policymakers, with conflicting expectations, with few empirical data prior to the Russo-Japanese War, and where new event data from the Russo-Japanese war could be expected to provide learning opportunities and theory refinement.

The third, fourth, fifth, and sixth chapters will test the hypotheses against the historical record of observations. Within these four chapters, the third, focusing on the Bayesian model, will be disproportionately long, as that is where most of the historical data will be introduced, and the following chapters will refer back to these data. As noted, the focus will be on classifying what the observers actually noted about the factors that were introduced in the second chapter, and not whether these observations were objectively “correct”. There are numerous pieces of primary source literature, but not so many as to make the task of surveying the universe of data overwhelming. Given the passage of time, even very sensitive classified data has become available for review. Many of these documents were produced before the First World War. Some, however, were done after the First World War, and

those add a different dimension to the analysis. During that war the vicarious observers of the Russo-Japanese War had intensive and costly first hand experience with warfare, and numerous changes occurred in doctrine and technology. After the conclusion of that war there was continued discussion of the Russo-Japanese War. Looking at the professional literature generated during this time period adds experimental leverage to some of the hypotheses generated earlier.

The seventh chapter will note the conclusions of the study, and reiterate which hypotheses were rejected. With so much data and so many nuances in written reports it is likely that most hypotheses will find some evidence which could support them. However, by surveying the primary source material we will be in a position to see which hypotheses do a better job of explaining more of the outcome. As already noted, this dissertation follows Lakatosian epistemology and so we do not seek to completely falsify and discredit rival theories. Instead, the ambition is to show which research program provides the most parsimonious and powerful explanation for learning. While I spend some time examining the assumptions of the rational choice, cognitive, bureaucratic, and ideational approaches my primary interest is in testing the explanatory power of the theories. To the extent that my findings contradict rational choice theory, they do so on what I will argue are its own most generous terms.

My conclusion is that while all theories have some explanatory power, the bureaucratic interest based program stands out as exceptionally weak, and the ideational research program seems exceptionally powerful. The purely rational model had mixed success, explaining some observation but leaving some important areas unexplained. Purely cognitive explanations had mixed success, but the introduction of social and cognitive psychology as a

microfoundation for the ideational model produced a powerful explanation for most of the observed behavior. The ideational model, drawing on psychological microfoundations, explained almost all of the variation seen in the military and naval observations, and did so parsimoniously.

My argument is that individuals do draw lessons from events. However, they do not draw lessons in a manner consistent with the rationalist predictions of Bayesian updating. Rather, the lessons that they draw are distorted. These distortions do not reflect the material interests of their organizations, nor do they reflect the general cognitive heuristic effects of observing complex phenomena across time and distance. Rather they reflect the influence of shared ideas about the nature of warfare. These shared ideas impart bias, provide analogical and metaphorical heuristics, and otherwise construct the way that the lessons of warfare are interpreted and recorded for posterity. The influence of shared ideas on military thought is what Edward Rhodes refers to as cultural-cognitive, what Stuart Kaufman calls cultural symbolism, what Alastair Iain Johnson calls strategic culture, and what Peter Katzenstein refers to as ideational⁹.

I will show that the ideas of military and naval theorists, which reached across national and organizational boundaries, provide powerful explanation for the differing lessons drawn by

⁹ Edward Rhodes, "Sea Change: Interest-Based vs Cultural-Cognitive Accounts of Strategic Choice in the 1890s," *Security Studies* 5:4 (Summer 1996) pages 73-124, Stuart J. Kaufman, "Rational Choice, Symbolic Politics, and Pluralism in the Study of Violent Conflict," in Monroe, Kristen Renwick (editor) *Perestroika! The Rancous Rebellion in Political Science* (Yale University Press, 2005), Alastair Iain Johnston "Thinking About Strategic Culture," *International Security* 19:4 (Spring 1995), and Peter J. Katzenstein, "Introduction: Alternative Perspectives on National Security," in Peter Katzenstein (editor), *The Culture of National Security: Norms and Identities in World Politics* (Columbia University Press, 1996) pages 1-32.

first hand observers and second hand commentators about the effects of specific weapons, tactics, and intangible factors in determining military and naval success in the Russo-Japanese War. The ideas of strategists and tacticians such as von Schlieffen guided the way that individuals analyzed the Russo-Japanese War. In naval affairs, the diverging views of Sir John Fisher and Alfred Thayer Mahan led to radically different interpretations of the naval battles of the Russo-Japanese War, and different lessons drawn about capital ship design and naval tactics. More broadly, the concepts of Mahan, Sir Halford MacKinder, and Sir Julian Corbett guided the way that military writers considered the maritime dimensions of a war that involved naval and military elements.

Getting a more efficient model of learning advances political science as a discipline, even if no new theory of learning emerges. By identifying which existing research program does the best job of explaining variation, I provide a roadmap for future researchers to frame their own investigations of learning. Furthermore, strong results could imply that one of these research programs may have broader applicability to questions of human behavior. More narrowly, there is a vibrant debate in international security literature about the effects of perceptions of military advantage on crisis stability¹⁰. By looking specifically at military cases of learning, and framing my rational, cognitive, bureaucratic, and ideational models in the context of the components of military effectiveness, I contribute to this debate as well. By understanding how individuals draw conclusions about military matters, we can better

¹⁰ Even rational choice literature is involved in this debate. They do not believe that perceptions differ from objective reality, and so perceptions of military advantage are synonymous with actual military advantage. Richard Ned Lebow, "Windows of Opportunity: Do States Jump Through Them?," *International Security* 9:1 (Summer 1984), reprinted in Stephen E. Miller, *Military Strategy and the Origins of the First World War* (Princeton University Press, 1985) pages 149-186

understand how they perceive the threat environment and how they might evaluate different force postures within that environment.

While not my primary goal, this dissertation also advances our understanding of the specific case of military judgments based on the Russo-Japanese War prior to the First World War. The serious military historical literature on this period is rather sparse, especially when compared to all of the attention lavished on the “misperception” of military and naval factors and the outbreak of the First World War¹¹.

In addition to its professional contribution, this dissertation also has relevant policy implications. Currently, warfare is changing. Enemies and potential enemies of the United States are developing new tactics and weapons. The United States is engaged in major and minor combat operations throughout the globe. In addition to fighting directly, we also have military and civilian technicians and observers supporting the military activities of our allies in South America, the Indian Ocean, and the Middle East. This means that our own military and national security elite are exposed to constant streams of information about the effectiveness of new methods of warfare. Additionally allies, neutrals, and potential adversaries are being exposed to data streams being generated by our own activities, and they are drawing lessons about our strengths, weaknesses, and vulnerabilities. If we can specify *how* militaries throughout the globe are likely to learn from events, we may be able to project *what* they are likely to learn. Furthermore, if we are aware of possible inhibitions to our own optimal rational learning, we might be able to take corrective action, if not in our gathering of data then in our processing of those data into finished intelligence products. This should

inform our own national security posture and place more effective tools and advice at the disposal of our elected officials.

¹¹ Indeed, the most rigorous and complete work drawing on primary sources is contained within the pages of Jack Snyder's *Ideology of the Offensive* (Cornell University Press, 1984).

Chapter I: Contending Theoretical Approaches to Learning

This dissertation is about how individuals learn from real world events. Levy defines learning “as a change of beliefs (or the degree of confidence in one’s beliefs) or the development of new beliefs, skills, or procedures as a result of the observation and interpretation of experience”¹². I will be a bit broader in my definition. Whereas Levy presupposes some baseline, by which he measures changes or new behaviors, I do not always establish a baseline. Instead I will look at how individuals drew lessons or conclusions “as a result of the observation and interpretation of experience”.

There are a number of different causal mechanisms that have been proposed to explain how individuals deal with the ongoing arrival of new information¹³. This is a rich body of cross disciplinary literature informed by cognitive and social psychology, microeconomic modeling, social anthropology, and structural theory. In the following sections I will show how some of these major theories generate general propositions about the way in which different individuals will deal with, and draw lessons from, new, possibly disconfirming, information. In this section I contend that a number of these traditions are not as dissimilar as they may appear. Indeed, many of these theories suggest differences of emphasis, not necessarily of content.

¹² Jack S. Levy, “Learning and Foreign Policy: Sweeping A Conceptual Minefield,” *International Organization* 48:2 (Spring 1994) page 283

¹³ For a review of many of these see Jack S. Levy, “Learning and Foreign Policy: Sweeping A Conceptual Minefield,”

Learning Theories

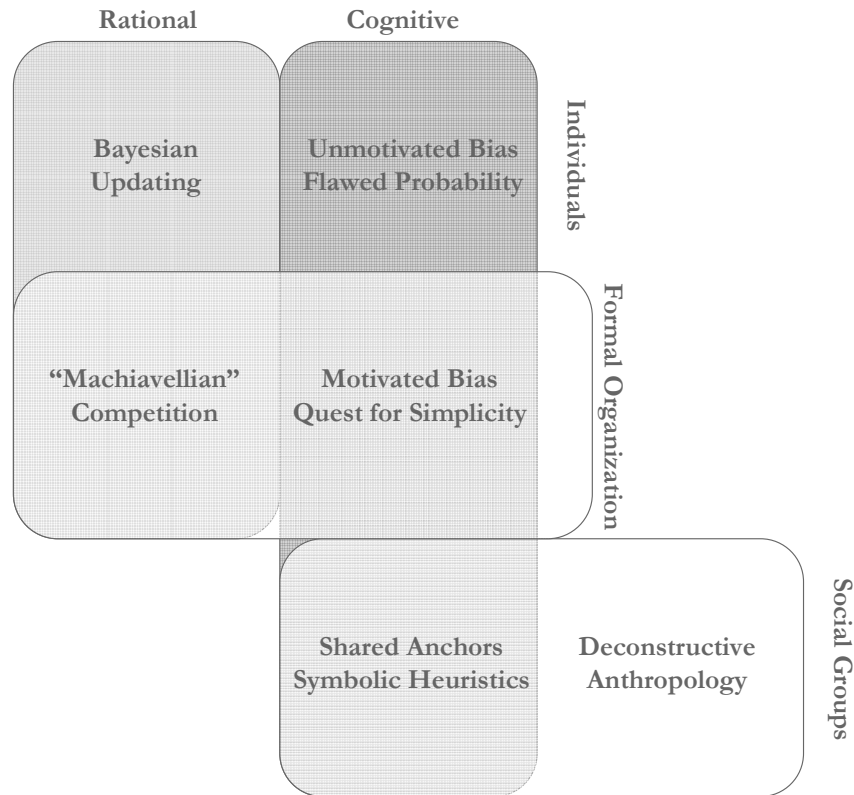
There are two traditions with sharply contrasted differences and very little overlap, these are the rational choice theories and cognitive theories. Briefly, rational choice assumes that individuals are efficient calculators of information that seek and are able to make the best estimates of the probabilities of events and the underlying causal mechanisms that govern interactions. Cognitive theories explicitly reject all of these claims. Instead individuals are flawed calculators (though in predictable ways), they inefficiently search for information, and they do not make valid estimates of probability. In addition, two other often used approaches overlay the rational and cognitive research programs. Using cognitive and rationalist microfoundations, they superimpose the notion of organizationally structured or ideationally constructed groups that shift the level of analysis from the individual to the group interest or shared idea. Organizational theories look at the formal rules and incentives of interaction, which are imposed by formal groups, and which govern an individual's decision making process. Cultural theories look at the equally compelling, though often less formalized, rules of interaction that function within *social* groups.

Confusion arises because cognitive and rational choice theories seek to be universal explanations of human behavior in their own right and are pressed into service as the operational microfoundations for more complex theories of social and structural organization. By itself organizational theory says very little. Instead, it is by coupling organization theory with concepts such as a cognitive desire to minimize inconsistency

(dissonance), or to seek out confirming data rather than disconfirming evidence, or to believe that the “necessary is possible”; and conversely linking the organization to rational microfoundations, explaining through principle-agency why organizations do not behave as rational unitary bodies but instead exhibit pathologies that produce suboptimal outcomes above the organization level, or why information flows are distorted to benefit vested interests that real explanatory leverage is achieved. In the same way, culture by itself has difficulty formulating a distinct causal argument, at least in a positivist social science framework. Instead, merging culture with psychology suggests an emphasis on socially shared reference points which serve as cognitive anchors that inhibit rational updating of beliefs. Shared symbols become decision heuristics which allow individuals to simplify complex environments and classify phenomena. The critical insight is that these anchors and symbols are shared by social groups, and thus different social groups respond differently to identical external stimuli.

Very broadly then these four traditions; rational choice, cognitive psychology, organizational politics, and cultural theory overlap and support each other in many key respects and with some clearly delineated differences (see chart below).

Figure 1-1 Contending Research Programs



My more detailed discussion of these theories is guided by this conceptual framework. Rational choice and cognitive psychology are capable of being microfoundations to other theories and complete theories in and of themselves. Bureaucratic politics can be driven by either cognitive or rational microfoundations, but with different manifested behaviors. Positive political science suggests that cultural theories are driven by cognitive microfoundations as well, although there is a separate research program based in deconstructivist anthropology. The four categories therefore yield six different theoretical approaches, five of which will be tested in this dissertation.

Contrasting Microfoundations: Rationality and Psychology

As noted above, there are two grand traditions which share little common ground. The rational choice approach and the cognitive approach can serve as microfoundations for explaining individual behavior within social or functional groups, and they also claim to explain behavior more generally, without necessarily needing the intervening variables of structural influence upon the individual. I will discuss these approaches first, as this discussion will underpin the culture and bureaucratic sections which follow as well as generate propositions in its own right.

The Rational Choice Approach

Rational choice begins with a simple and parsimonious sets of postulates, but has evolved to become one of the most diverse and controversial varieties of political explanation. This section is not an attempt to provide an overview of the development of the research program, but to specifically identify those aspects of rational choice which directly discuss the notion of learning from event data for social science¹⁴.

¹⁴ The controversies over rational choice theory and its discontents have filled many a special issue of academic journals and led to many books. Often the debates can get a bit heated, and the participants enthusiasm for the topic occasionally overwhelms proper debate etiquette. For good overviews of the theory, some of its more prominent applications, its critics, and its response to those critics see Kristin Renwick Monroe (editor), *The Economic Approach to Politics: A Critical Reassessment of the Theory of Rational Action* (Harper Collins, 1991); Donald P. Green and Ian Shapiro, *Pathologies of Rational Choice Theory: A Critique of Applications in Political Science* (Yale University Press, 1994); and Jeffery Friedman (editor), *The Rational Choice Controversy* (Yale University Press 1996). Green and Shapiro are the most critical of rational choice theory, but their criticism is nuanced, and it

Rational choice theory believes that individuals are efficient utility maximizers. That is, individuals have a set of internally consistent preferences which generate utility functions¹⁵. When confronted with any sort of choice individuals will conduct an exhaustive and accurate search for information, and then make the choice that maximizes their discounted expected utility given their preference function. When confronted with uncertainty, individuals will derive the best estimate of the underlying probability distribution and then compute discounted expected utility. In this formulation individuals may still make errors, but these errors are due to chance, not mistakes¹⁶. There may be bad outcomes, but there are not bad choices. Bad outcomes are not, in and of themselves, indicators of deviations from rational choice theory.

Some advocates of rational choice theory will relax some of the constraints on rationality. For example, the search for complete information to guide decisions may itself be a search done with a rational rule set, and if search is costly there will be a point where the marginal

provoked the Friedman edited volume which provides a decorous point by point rebuttal of the Green and Shapiro piece. The Monroe collection attempts to provide a balanced discussion within a single volume.

¹⁵ In political science advocates of rational choice theory are explicitly noncommittal on the issue of preference formation. In microeconomics utility is defined more strictly as net assets under management. This necessitates a step of transforming everything into net assets. For two very different preference mapping schemes see Richard A. Posner, *The Economics of Justice* (Harvard University Press 1981) and Jon Elster, "Marxism, Functionalism, and Game Theory: The Case for Methodological Individualism," *Theory and Society* 11 (1982) pages 453-482. In political science preference formation determined by factors other than net assets is important. See, for example, Aaron Wildavsky, "Choosing Preferences by Constructing Institutions: A Cultural Theory of Preference Formation," *American Political Science Review* 81 (March 1987) pages 3-21.

¹⁶ For example, an individual asked to pick "heads" or "tails" on a coin flip may still make a choice that is not correct, but does not invalidate rational choice theory. Instead it shows the influence of uncertainty on decisionmaking. Jack Hirshleifer, and John G. Riley *The Analytics of Uncertainty and Information* (Cambridge University Press, 1992).

utility of more information is exceeded by the cost of continued search, and so the complete information search may not be exhaustive¹⁷. More generally, the consideration of options may itself be constrained given the costs of information search and time¹⁸. Thus, a lack of exhaustive completeness, for either data search or option analysis, may not in and of itself be indicative of a divergence from a rational model.

A second relaxation, adopted by some, is to shift the level of analysis from the strictly rational individual to the aggregately rational group. Individuals may violate rational behavioral rules at some time, but in aggregate behavior is rational. Individuals that make bad decisions are exploited efficiently by the behavior of other actors more closely adhering to the precepts of rationality, and thus in studies of groups, or of individuals over long time, rationality is expected¹⁹. This relaxation serves to protect rational choice theory from falsification due to a small number of disconfirming specific individual events, while retaining the essential core of being a generalized theory of behavior that explains a lot and generates non trivial predictions with few assumptions.

¹⁷ Michael W. Martin and Jane Sell, "The Marginal Utility of Information: Its Effects Upon Decision Making," *Sociology Quarterly* 21:2 (March 1980) pages 233-242; Mienieke W. H. Weenig and Maarleen Maarleveld "The Impact of Time Constraint on Information Search Strategies in Complex Choice Tasks," *Journal of Economic Psychology* 23:6 (December 2002) pages 689-702.

¹⁸ Colin Williams and Tad Hogg, "Exploiting the Deep Structure of Constraint Problems," *Artificial Intelligence* 70 (1994), pages 73-117.

¹⁹ As may be expected, such approaches are especially common in the analysis of financial markets, which present constant adjustments (in the level of asset prices) and clear winners and losers in both the short and long term. Eugene Fama, "The Behavior of Stock Market Prices," *Journal of Business* 38 (1965) pages 34-105; Eugene Fama, Lawrence Fisher, Michael Jensen, and Richard Roll, "The Adjustment of Stock Prices to New Information," *International Economic Review* 10 (1969) pages 1-21; Bruce I. Jacobs and Kenneth Levy "Transporting Alpha," in Jacobs and Levy (editors) *Market Neutral Strategies* (Wiley, 2005); Myron Scholes, "The Market for Securities: Substitution Versus Price Pressure and the Effects of Information on Share Prices," *Journal of Business* 45 (1972) pages 179-211.

Finally, a third relaxation emerged from proponents of the so called “as if” formulation of rational choice²⁰. Following Milton Friedman, these theorists assert that an individual’s violation of the procedures and precepts of rationality are of little concern so long as application of the rational choice model generates useful predictions about behavior which are sustained by empirical results²¹. This formulation recognizes that models are necessarily simplifications, and that simplifications are driven by the need to explain and generalize without detailing the idiosyncrasies of the context and process of any particular event. The utility, however, of a model is judged by its ability to function as a decision aid, and having a research program which generates predictions that are more empirically accurate than rival research programs is useful to making decisions. Thus, evidence of non conformity with the processes of rationality is not necessarily a problem for rational choice, instead it must be compared on both simplicity and predictive accuracy against alternative explanations.

The critical microfoundation of the rational choice approach to learning was found and first published posthumously in 1763, among the papers of an obscure Presbyterian minister, the Reverend Thomas Bayes. For reasons that still remain elusive, Bayes worked out a theory of estimating likelihood of events given an original distribution estimate and an ongoing flow of new information. This formula is²²:

²⁰ Daniel Little, *Varieties of Social Explanation: An Introduction to the Philosophy of Social Science* (Westview Press, 1991)

²¹ Friedman, Milton “The Methodology of Positive Economics,” *Essays in Positive Economics* (University of Chicago Press, 1966) page 40-41

²² Bayes’ original formulation was published posthumously under the title “An Essay Towards Solving a Problem in the Doctrine of Chances, by the Late Rev. Mr. Bayes, communicated by Mr. Price, in a letter to John Canton, M.A. and F.R.S.,” in *Philosophical Transactions of the Royal Society of*

$$P(A|B) = \frac{P(B|A) P(A)}{P(B)}$$

Where the probability of A given B is a function of the probability of A, the probability of B, and the probability of B given A. Rigorous application of the formula sometimes generates counterintuitive results to those not schooled in probability theory²³. In essence Bayes' Theorem treats every datum equally, and adjusts the best estimate of probability (the prior) to account for new data. This adjusted probability becomes the new prior, and more data adjusts the probability estimates iteratively. Over time a picture of the actual distribution is built up and, as more data are collected, confidence in this estimate of the distribution increases.

Bayes' Theorem provides the core of modern game theory, as it offers a way to solve games under conditions of uncertainty²⁴. During World War Two application of Bayes' to problems of antisubmarine warfare (ASW) generated solutions to games with mixed strategies and uncertainty²⁵. After the War ended, the Department of Defense sponsored

London 53 (1763) pages 370-418. This has been made available online at <http://www.stat.ucla.edu/history/essay.pdf> (last visited June 2008)

²³ These include the famous "Monty Hall" problem and more nuanced discussions of probabilistic inference. See Sam Savage, "Statistical Analysis for the Masses," in Bruce Spencer, (editor) *Statistics in Public Policy* (Oxford University Press 1998).

²⁴ Applications of Bayes' Theorem to issues in Political Science are numerous. A good introduction is in James D. Morrow, *Game Theory for Political Scientists* (Princeton University Press, 1994) pages 161-301. Because Bayes' is fundamental to solving most game theoretic problems, authors may use game theory without specifically noting the contribution of Bayes. However, wherever an author deals with cases of uncertainty, the mathematics that are used to find solutions are predicated on Bayes' Theorem.

²⁵ Philip M. Morse and George Kimball, *Methods of Operations Research* (originally published jointly in sections by MIT Press, John Wiley & Sons, and the Office of Scientific Research and Development-US Navy in 1951, republished in its entirety by Military Operations Research Society, 1998) pages 103-109. The "games" were the placement of ASW barriers and subsequent adjustments of submarine tactics and barrier placements. The Morse and Kimball discussion is unwieldy by itself, because they do not resort to purely game theoretic notation for expressing the problem. However,

research rapidly proliferated through the social sciences and policy studies communities. Ongoing military research in nuclear deterrence served to train generations of analysts and populate whole fields of study, and indeed whole institutions grew up largely on the modeling and study of applications of rational choice interaction²⁶.

The nexus between Bayes' and noncoöperative game theory links the rational choice approach to realism. Realists don't often evoke Bayes, but they often use game theory to explain the use of force and the emergence of collaborative behavior. While not all rational choice models support a realist paradigm; some rigorous variants of realism, implicitly or explicitly, are predicated on rationalist microfoundations²⁷. Realism assumes that states recognize threats and marshal domestic and international resources to take appropriate

when one realizes that another arm of the Navy was funding von Neumann and Morgenstern in Princeton while Morse and Kimball were at MIT, the cross fertilization that is masked in formerly compartmentalized national security efforts becomes apparent. For a later effort to link the operations research and game theory communities' research into the same area of naval tactics see also Robert F. Kuenne, *The Attack Submarine: A Study in Strategy* (Yale University Press, 1965).

²⁶ Much of the work was done at the RAND Corporation, and a history of this organization in many ways parallels the intellectual evolution of the approaches to the problems of national security. R. D. Specht, "A Decade of Military Operations Research in Perspective: A Symposium. Rand- A Personal History" *Operations Research* 8:6 (November 1960) pages 825-839; Richard Shultz, "Coercive Force and Military Strategy: Deterrence Logic and the Cost-Benefit Model of Counterinsurgency Warfare," *Western Political Quarterly* 32:4 (December 1979) pages 444-466; Allen S. Whiting, "The Scholar and the Policy-Maker," *World Politics* 24 (Spring 1972) pages 229-247; Colin S. Gray, "Across the Nuclear Divide: Strategic Studies, Past and Present," *International Security* 2:1 (Summer 1977) pages 24-46. For a critical view see Colin S. Gray, "What RAND Hath Wrought," *Foreign Policy* (Autumn, 1971), pages 111-129. RAND also sponsored Jack Snyder's work on strategic culture, which specifically took aim at the attempt to apply this US specific concept of increasingly abstract models to likely Soviet war planning assumptions. See Jack L. Snyder, *The Soviet Strategic Culture: Implications for Limited Nuclear Operations*, (September 1977) RAND Corporation: Project Air Force R-2154-AF.

²⁷ Joseph M. Grieco, "Anarchy and the Limits of Cooperation: A Realist Critique of the Newest Liberal Institutionalism," *International Organization* 42:3 (Summer 1988), pages 485-507. However, some realists are explicit in their rejection of rational choice formulations.

actions to control those threats²⁸. Realism is primarily concerned with the growth and survival of states, and the power interactions between states are modeled as n-person games²⁹.

When applied to quantitative problems, Bayes' Theorem produces quantitative results. Unfortunately, we do not have accurate quantitative data, but we do have an abundant source of qualitative data. Even in qualitative problems it is possible to use Bayes' Theorem, albeit without the same degree of precision. Bayes' Theorem leads to a number of qualitative statements about learning.

HR1 Multiple individuals all applying the theorem to the same event data should very quickly converge on a like estimation of the underlying phenomenon³⁰.

²⁸ Posen goes so far as to suggest that in the absence of threats the organization of even something as vital military resources can fall prey to pathological behaviors and be suboptimal for providing security to the state. However, once threat becomes salient, leaders will assert optimal policy guidelines and curb such pathologies. See Barry R. Posen, *Source of Military Doctrine: France, Britain, and Germany Between the World Wars*, (Cornell University Press 1984).

²⁹ Not all realists use game theory to characterize relations, and indeed some attack such a formulation. See Stephen M. Walt "Rigor or Rigor Mortis? Rational Choice and Security Studies," *International Security* 23:4 (Spring 1999) pages 5-48. Yet ultimately for realism to predict outcomes it must assume that states act as if they can correctly (if not precisely) calculate the distribution of power and the probable changes to this distribution for a menu of potential actions. Robert Powell, "Anarchy in International Relations Theory: The Neorealist-Neoliberal Debate, Review of *Neorealism and its Critics* and *Neorealism and Neoliberalism: The Contemporary Debate*," *International Organization* 48:2 (Spring 1994) pages 313-344 and "The Modeling Enterprise and Security Studies," *International Security* 24:2 (Autumn 1999) pages 97-106.

³⁰ Even if individuals hold different priors (possible in cases where the probability distribution is purely speculative given no, or very little, data), their exposure to the same event data should force convergence through the process of regular iterated updating.

HR2 Individuals should not fixate on specific data while discarding other event data from the same information stream.

HR3 Individuals should not devote effort to discrediting, or “explaining away”, the event data³¹.

The Cognitive Approach

Theories of individual learning are inherently wrapped up with human psychology, and yet the study of psychology is not the dominant mechanism for explaining behaviors within political science. Disentangling the reinforcing, and occasionally contradicting, effects of psychological variables from other causal variables is a complex task, and serves to dissuade analysts from using the approach. For example, in her study applying heuristics to American foreign policy decision making, Nancy Kanwisher explicitly states that “psychological accounts are most useful in their ability to supplement (rather than supplant) explanations at other levels... Thus an understanding of the role of cognitive processes in generating and sustaining fallacies can lend plausibility to economic and organizational accounts of why flawed policies are implemented”³². Thus, in an article that generates support for heuristic models, the author undercuts, in the penultimate paragraph, the utility of relying on such

³¹ Clearly discrepant data should be overwhelmed by the quantity of conforming data, and thus not be worthy of much comment. Discrepant data that are not overwhelmed cannot be considered truly discrepant by the rules of Bayes’ Theorem. Thus if there is a prior and two subsequent, and discrepant, data points an individual confirming or overturning the hypothesis cannot be said to be rigorously applying Bayes’ Theorem. A small “n” becomes a problem for qualitative (and even quantitative) applications of Bayes’ Theorem. As the research design section will make clear, there are strategies for overcoming the small n problem available for qualitative explanations of military learning by expanding the scope of inquiry.

³² Nancy Kanwisher, “Cognitive Heuristics and American Security Policy,” *Journal of Conflict Resolution* 33:4 (December 1989) page 673.

models! Failing to adequately disentangle the relationships between psychological processes and material interests has been a factor in the failure of “learning theories” to gain widespread acceptance in political science³³.

Cognitive psychology offers a causal mechanism for learning very different from the rational choice approach. Like strict rationality, cognitive psychology aspires to be a universal theory, applicable to all people under all circumstances. However cognitive psychologists argue that all individuals are subject to learning short cuts (heuristics) and data processing deficiencies (biases) that regularly and almost infallibly contribute to misjudgment under specific circumstances. While cognitive psychology accepts the rationalist premise that people seek to maximize their utility, it differs in specifying the conditions under which this calculation is sabotaged by cognitive processes³⁴. Thus human utility maximizers will not behave identically to computer utility maximizers³⁵. The seminal work on these heuristics and biases, one which earned its surviving coauthor the Nobel Prize for Economics (despite the author’s own profession in psychology) was Daniel Kahneman and Amos Tversky’s

³³ See Jack S. Levy, “Learning and Foreign Policy: Sweeping a Conceptual Minefield,” *International Organization* 48:2 (Spring 1994), and Andrew Bennett, *Condemned to Repetition? The Rise, Fall, and Reprise of Soviet-Russian Military Interventionism, 1973-1996* (MIT Press, 1999).

³⁴ Colin Camerer and Ernst Fehr, “When Does ‘Economic Man’ Dominate Social Behavior?,” *Science* 311 (January 2006).

³⁵ The focus on the human has evolved into tighter linkages between psychobiology and cognitive psychology. See Alan G Sanfey, James Rilling, Jessica Aronson, Leigh Nystrom, and Jonathan Cohen “The Neural Basis of Economic Decision-Making in the Ultimatum Game,” *Science* 300 (June 2003); Colin Camerer, “Strategizing in the Brain,” *Science* 300 (June 2003); and Colin Camerer, George Loewenstein, and Drazen Prelec, “Neuroeconomics: How Neuroscience Can Inform Economics,” *Journal of Economic Literature* XLIII (March 2005). While not all behavioral psychologists are explicitly predicated on the theories of psychobiology or “neuroeconomics”, neuroeconomics and psychobiology does explicitly link into cognitive psychology.

“Judgment Under Uncertainty: Heuristics and Biases”³⁶. Originally a set of observations about areas where human processing of data breaks down in predictable ways, the article spawned a field of theorists and experimenters who sallied forth to formalize and test these propositions.

Cognitive theories identify a number of heuristics and biases which, advocates argue, are applicable to all people operating in complex environments. Many of these are related, although they are also independent, i.e., the absence of one heuristic doesn’t necessarily preclude the emergence of other heuristics. In their original piece Amos Tversky and Daniel Kahneman cited three heuristics which created distinct biases. Since then, a number of heuristics and biases have been coined and given snappy names. To some extent this has been a bane, rather than boon, to the approach, as some of the findings should be subsumed under the broader Kahneman and Tversky framework, others need to establish a theoretical basis, and still others are *post hoc* rationalizations of anomalies³⁷. This section will not be an attempt to draw out implications of every cognitive bias, only those that bear directly upon the problem of learning.

³⁶ Kahneman, Daniel and Amos Tversky “Judgment Under Uncertainty: Heuristics and Biases” *Science* (1974). This was refined as Daniel Kahneman, Paul Slovic, and Amos Tversky (editors) *Judgment Under Uncertainty- Heuristics and Biases* (Cambridge University Press, 1982). Both separately and together Kahneman and Tversky published theoretical refinements and tests of the theory, yet this relatively short piece encapsulates the critical points of the modern cognitive psychological critique of rationality as applied to information processing.

³⁷ In particular, the percept of cognitive theories as being *post hoc* justifications of anomalies masquerading as a theory has provided an opening for critics of the cognitive approach. See Donald Wittman, “Contrasting Economic and Psychological Analyses of Political Choice: An Economist’s Perspective on Why Cognitive Psychology Does Not Explain Democratic Politics,” in Kristin Renwick Monroe (editor), *The Economic Approach to Politics: A Critical Reassessment of the Theory of Rational Action* (Harper Collins, 1991).

Confirmation bias Scientists are trained early on that theories are never proved to be correct. Instead, confidence in the veracity of theories builds over time as formal searches for disconfirming evidence turn up empty³⁸. Once individuals have a hypothesis, they should therefore seek out disconfirming evidence, and every failed search should increase an individual's confidence in the hypothesis. Instead, individuals often seek out confirming data, and increase their confidence in hypotheses after each successful confirming search. Even when disconfirming data appears, individuals will often focus on confirming data, and systematically discount disconfirming data³⁹. Rather than testing hypotheses by looking for disconfirmation, individuals reinforce hypotheses by gathering confirming, or potentially confirming, data. Note that this bias indicts two tenants of rational choice theory; first individuals do not engage in optimal searches for data, and second, individuals do not appropriately aggregate data into confidence intervals.

As a learning hypothesis this suggests that to understand the lessons “learned” about doctrine from a historical event we need to first understand the observer's current doctrine. Once we know the current doctrine, we would expect that lessons drawn would confirm the current doctrine. If observers have dissimilar doctrines, they will draw dissimilar lessons.

³⁸ Thomas S. Kuhn, *The Structure of Scientific Revolutions* (University of Chicago Press, 3rd edition, 1996) provides an overview of scientific progress, though is less concerned with the socialization of individual scientists. The critical works on falsification *per se* are Karl Popper, *The Logic of Scientific Discovery* (Basic Books 1959) and *Conjectures and Refutations* (Routledge, 1963). See also Gary King, Robert Keohane, and Sidney Verba *Designing Social Inquiry: Scientific Inference in Qualitative Research* (Princeton University Press, 1994) pp 100-105. Falsification lies behind the fundamental statistical concept of the “null hypothesis” introduced in basic hypothesis testing.

³⁹ Confirming and disconfirming data should not be equally weighed. Indeed, if even a small amount of disconfirming data come to light the theory should, by scientific standards, be in jeopardy no matter how much data consistent with the predictions of the theory had been amassed.

Furthermore, in instances where discrepant data are discussed, we should expect authors to build a case to refute the applicability or discard those data from further analysis.

HH1: Lessons drawn will reflect agreement with the idiosyncratic tactical and strategic systems of the observing military.

HH2: Discrepant data are likely to be challenged, refuted, or otherwise cast aside by ad hoc explanations.

Hindsight Bias Individuals with hindsight may subconsciously reevaluate prior probabilities based on the benefit of hindsight⁴⁰. Individuals are unable to correctly recall their probability estimate once they have the benefit of hindsight, and tend to believe that their posterior probabilities conformed with the demonstrable outcome of an event. While this bias doesn't directly impeach rational choice theory, it does suggest that unless probability estimates are gathered and recorded in real time, *post hoc* probability estimation and reconstruction will be systemically biased to conform with a known outcome.

This generates two testable hypotheses. First, we would expect that observers and historians prior to World War One would attribute Japanese success to Japanese strategy and tactics, and correspondingly attribute Russian failure to Russian strategy and tactics. Knowing that Japan won the Russo-Japanese War will shape the lessons that individuals draw, irrespective of their organizational or national affiliation. Second, after the First World War, we would

⁴⁰ Baruch Fischhoff, "Hindsight \neq Foresight: The Effect of Outcome Knowledge on Judgment Under Uncertainty," *Journal of Experimental Psychology* 1 (1975) pp 288-299; Jonathan Baron, *Thinking and Deciding* (op cit, 2000).

expect that the lessons drawn from the Russo-Japanese War would reflect the successful strategies and tactics of that conflict. Therefore, in areas where the Japanese choices in the Russo-Japanese War would not have been successful during World War One (or where Russian choices would have been successful in World War One), we should see a reversal in the lessons learned literature. As all of our observer militaries experienced World War One, we would expect this reversal to be universal as well.

HH3: Observers and professional publications will attribute the superior tactical and strategic system to the winner of the war (Japan) and the inferior to the loser (Russia)

Availability Heuristics Individuals do not process each datum according to its accuracy and weight within a series of data⁴¹. Instead some data are given more weight than Bayesian updating would suggest. The vividness, recentness, level of superfluous detail, or confluence with other recent data cause individuals to overemphasize or underemphasize individual data out of proportion to what its “true” value should be⁴². Within the class of availability heuristics Jervis singles out what he terms to be the “last war” heuristic which drives learning specifically within military and civil national security organizations.⁴³ This heuristic violates

⁴¹ Tversky and Kahneman (op cit, 1974).

⁴² Stuart Oskamp, "Overconfidence in Case-Study Judgment," *Journal of Consulting Psychology* 29 (1965), pages 261-265; Fred D. Davis, G. L. Lohse, and J.E. Kottmann,. "Harmful Effects of Seemingly Helpful Information on Forecasts of Stock Earnings," *Journal of Economic Psychology*, 15, (1994) pages 253-267.

⁴³ Robert Jervis, *Perception and Misperception in International Politics* (Princeton University Press 1976), p. 266 establishes “Last War” as a specific heuristic, although it seems more of a specific application of the more general Tversky and Kahneman propositions. It is an extension of the last availability heuristic, but is not identical due to a blending with the anchoring heuristic. Data on the last first

two central tenants of the rational model. It suggests that individuals do not engage in a perfect search for information and that the information that they do have is inappropriately aggregated into beliefs.

The availability heuristic generates three hypotheses. First all of the observer reports should be influenced by their first hand observations during the war. The observers lived in Manchuria, traveled with their host staffs, watched battles, and walked the battlefields amidst the physical ruin and human corpses. This was an exceptionally vivid experience, and should influence the lessons drawn. All observers had similar vivid experiences, and therefore we should expect the lessons of observers to be largely in agreement. In contrast, the writers of the official histories and professional publications, a hemisphere removed from Manchuria, had other more vivid experiences to draw on, notably their own “last wars”⁴⁴. Thus our second hypothesis is that the official literature will reflect the lessons of the respective “last wars”, and may diverge among countries. So third, we can predict that the lessons drawn in first hand observer reports may differ from those drawn in official histories.

HH4: Observer reports should be in agreement about the lessons of the war

hand war may perhaps be a generation behind, and data on vicarious wars may be readily available. However a military will revert back to its own organizational “first hand” experience, and not to the vicarious recent experience. In that sense it resembles Reiter’s description of learning, in which states only drew lessons from their own experience and that lesson was a simplistic “did it or didn’t it work?” lesson. Dan Reiter, *Crucible of Beliefs: Learning, Alliances, and World Wars* (Cornell University Press, 1996)

⁴⁴ For Germany and France it was the 1870 Franco-Prussian War, for Britain the Boer War, and for the United States the Spanish-American War.

HH5: Official histories and professional publications may disagree with each other and instead draw lessons in agreement with their respective “last wars”, which differ by nation

HH6: Individual observers will give disproportionate weight to first hand observations and vivid occurrences

Anchoring Heuristics Certain concepts may serve as “anchors”. Anchoring events exert an undue influence on an individual’s updating algorithms, causing them to update imperfectly and to simultaneously inappropriately narrow their confidence intervals around a parameter estimate. These anchors lead individuals to become predisposed to accept potentially confirmatory evidence and critical of disconfirming evidence⁴⁵. This violates the predictions of rational choice theory in two ways. First, Bayes’ updating theorem will not be appropriately used to generate updated estimates when new data are available. Second, the narrow confidence intervals around the (flawed) point estimate will not be justified.

The anchoring heuristic can offer another partial explanation, along side the availability heuristic, for Jervis’ “last war heuristic”. The experiences of the last war can serve as cognitive anchors, as well as readily available analogs, when members of the military are exposed to new data on wars. A second implication may be the emergence of what Jack Levy has termed a “backwards anchor”. This arises when individuals reinterpret a past event

⁴⁵ Mark R. Lepper, Charles G. Lord, Lee Ross, “Biased Assimilation and Attitude Polarization: The Effects of Prior Theories on Subsequently Considered Evidence,” *Journal of Personality and Social Psychology* 37 (1979), pp 2098-2109

in light of a salient recent event. Individuals may revisit the past event and see foreshadowing of the more recent event.

Because the “last war heuristic” seems to be directly applicable to the case of military learning about military events, and since it is entangled with both anchoring and availability, the testing of the last war heuristic can be seen as a partial test of anchoring. Secondly, I will test the notion of backwards anchoring by hypothesizing that the First World War will influence the analyses of the Russo-Japanese War which are prepared after 1918.

HH7: After the First World War, analyses of the Russo-Japanese War should reflect the influence of the tactical lessons of the First World War in their discussion of the Russo-Japanese War.

Analogies and Metaphors Similar to the availability heuristic, analogical reasoning has grown into its own semi autonomous field of study⁴⁶. Individuals deal with complex situations by resorting to analogies with events which are felt to be similar to the current situation, and drawing lessons from the historical experience⁴⁷. For individuals, analogical reasoning is a four step process. They first identify the salient elements of the current event,

⁴⁶ Richard Neustadt, and Ernest May *Thinking in Time: The Uses of History for Decision Makers* (Free Press, 1986); Yuen Foong Khong, *Analogies at War: Korea, Munich, Dien Bien Phu, and the Vietnam Declarations of 1965* (Princeton University Press, 1992); Keith Shimko, *Images and Arms Control: Perceptions of the Soviet Union in the Reagan Administration* (University of Michigan Press, 1991); Pascale Combelles Siegel, “Thoughtless in Time?,” *Foreign Policy in Focus Occasional Paper* (February 2003).

⁴⁷ In her study of the comparative explanatory power of psychological explanations Deborah Welch Larson found that analogical reasoning, including analogies drawn from personal experience, outperformed other social psychological theories, such as cognitive dissonance. Larson, *Origins of Containment: A Psychological Explanation* (Princeton University Press, 1985).

they then retrieve analogies from their existing knowledge base, they then map the current event on to the analogous event, and then they draw proscriptive conclusions from the analogy⁴⁸. Metaphors and analogies differ in that metaphors are simple models, such as a string of falling dominos, where as analogies are tied directly to a historical experience, such as the Munich agreement with Hitler⁴⁹. In either case, however, the result is that the comparison brings a recommendation for actions and implies motivations for multiple actors from these generalizations, independent from other data specific to the current event. The analogy can also “fill in the blanks” with default values, derived from the analogical event, for unknown variables in the current event. These comparisons can also override other, more complex guides to behavior, such as ideology. Furthermore, metaphors and analogies are salient for a wide cross section of individuals, independent of their subject matter expertise about the issue and not necessarily limited to those with only a cursory familiarity with a subject⁵⁰. Analogical reasoning violates multiple assumptions of rational choice theory. There is no exhaustive search for relevant information (and indeed, the search may be foreclosed by analogies substituting default data values for missing data), new data are not incorporated into confidence intervals around beliefs, options are not

⁴⁸ M. J. Peterson, “Analogical Reasoning and Outer Space Law,” *International Organization* 51:2 (Spring 1997), p 248. Khong identifies six steps which are specific to the use of analogies in policy decision making. These include defining the situation, assessing the stakes, drawing a policy implication, assessing the likelihood of success, determining moral “rightness” and identifying dangers. Khong, (op cit) p 20-21. However, because Peterson’s four stages are more generally related to analogical reasoning, while Khong is focused on analogical policy implementation, the four categories seem most appropriate for a focus on learning.

⁴⁹ Keith Shimko, “Foreign Policy Metaphors: Falling ‘Dominoes’ and Drug ‘Wars’,” in Patrick Haney, Jeanne Hey, and Laura Neack (editors), *Foreign Policy Analysis: Continuity and Change in Its Second Generation* (Prentice Hall, 1995)

⁵⁰ Mark Schlesinger, and Richard R. Lau “The Meaning and Measure of Policy Metaphors,” *American Political Science Review* 94:3 (September 2000);

considered, and feedback is distorted as external events unfold in reaction to decisions and exogenous events.

The analogical reasoning concept is closely related to other cognitive concepts such as the schema, the script, and the operational code⁵¹. While these concepts do have distinct psychological definitions, in practice schema, scripts, analogies, and metaphors have been used interchangeably within political science⁵². For the purposes of this analysis I will conform to political science convention.

Correspondence Bias⁵³ (also known as the **Fundamental Attribution Error**) Individuals often associate causality of beneficial events with their own personal intention or action, not systemic factors. They associate causality of problematic events with systemic factors. This allows them to discard evidence which may indicate a systemic problem in a hypothesized cause-effect relationship as idiosyncratic to the peculiar nature of the evidence. The correspondence bias reinforces other heuristics and biases by providing a rationale to discard problematic or potentially disconfirming evidence.

⁵¹ Operational code is more of a direct political science application of psychology, rather than a distinctly psychological approach. See Alexander George, "The 'Operational Code': A Neglected Approach to the Study of Political Leaders and Decision Making," *International Studies Quarterly* 13 (1969) pages 190-222

⁵² Khong, (op cit) pages 26-27.

⁵³ Daniel T. Gilbert, and Patrick S. Malone "The Correspondence Bias," *Psychological Bulletin* 117:1 (January 1995) pp 21-38; Jonathan Mercer, *Reputation in International Politics* (Cornell University Press, 1996). Mercer's study is powerful, and notes that the fundamental attribution error makes consideration of reputational effects in bargaining nearly irrelevant as application of individual and systemic causality make it impossible for individuals to adjust their reputation.

Cognitive psychology is explicitly universal in its approach. Its proponents argue that it can explain elements of human behavior, irrespective of material or social interests⁵⁴. However the study of cognition by psychologists has also led to a different approach that accepts the interplay between interests and flawed cognition. This gives rise to the concept of the **motivated bias**, among others⁵⁵. Individuals may filter information selectively in order to reinforce their own choices and to accomplish specific goals. More succinctly, in the words of Jack Snyder, individuals believe that “the necessary is possible”⁵⁶. The motivated bias, important in and of itself, can be used as a microfoundation for the non-rational approach to bureaucratic politics. If decisions are perceived as necessary for advancing the interests of the organization, they become perceived as possible, and preferred, courses of action.

The application of cognitive models to political science inquiry has been sporadic, especially within international relations. Robert Jervis built off this field of inquiry in his *Perception and Misperception*, but within the international relations, and especially security studies, the second section of the book, which focused on learning and psychology was overshadowed by the first section, which established the deterrence and spiral models.⁵⁷ Since Jervis’ attempt few

⁵⁴ Tversky and Kahneman are quite explicit on this point, noting that “[t]hese biases are not attributable to motivational effects such as wishful thinking or the distortion of judgments by payoffs and penalties,” Tversky and Kahneman “Judgment Under Uncertainty,” (op cit) p 18.

⁵⁵ Kaufmann (1994) page 559 discusses the differences between the motivated and unmotivated bias approaches, but then notes that their critique of rationality is “broadly similar”. His own findings support both approaches, but he generates stronger empirical support for motivated bias. “Out of the Lab and into the Archives: A Method for Testing Psychological Explanations of Political Decision Making,” *International Studies Quarterly*, 38:4 (December 1994) pages 557-586.

⁵⁶ Snyder, *Ideology of the Offensive* (op cit).

⁵⁷ Robert Jervis, *Perception and Misperception in International Politics*, (op cit). The focus of international security scholars on deterrence and spiral was most likely a result of the time when Jervis published. For good reason, in the 1970s and 1980s international relations and strategic studies were consumed with crisis stability and signaling between actors in a bipolar system. See Sir Lawrence Freedman, *The*

have gained much traction with universal theories of cognitive psychology applied to international relations⁵⁸, although there has been limited acceptance within specific areas, notably prospect theory and multi-heuristic approaches to decision making⁵⁹. Political psychologists regard Jervis' work as seminal, but have tended to evolve as a strand of inquiry parallel those in international security.

Less ambitious cognitive models, which try and explain individual applications of cognitive theory to specific problems in international relations have met with moderate success⁶⁰. This approach, however, has its limitations. Some research is focused squarely on the learning of

Evolution of Nuclear Strategy, 2nd edition (Saint Martin's Press, 1989) which incidentally traces the evolution of security studies in parallel to the evolving nuclear relationship. The preoccupation with the outbreak of the First World War in the 1980s was not due to a sudden interest in historical affairs, but driven by the concern of averting the accidental outbreak of a destructive war. See Steven E. Miller, Sean M. Lynn-Jones, and Stephen Van Evera (editors) *Military Strategy and the Origins of the First World War: An International Security Reader*, revised and expanded edition (Princeton University Press 1991). Scholars more interested in political psychology, such as Levy, Larson, and Wohlforth, have also cited Jervis' important role in the germination of their subfield. Jervis' book is widely regarded as a classic, and because of its broad scope and richness it is only natural that some items would fail to resonate with some scholars as well as others.

⁵⁸ Notable exceptions to this include Deborah Welch Larson, *Origins of Containment: A Psychological Explanation* (Princeton University Press, 1985) and William Curti Wohlforth, *The Elusive Balance: Power and Perceptions During the Cold War* (Cornell University Press, 1993). Larson used psychological theories to explain the actions of numerous policymakers during the early years of the Cold War, while Wohlforth used archival research to show that perception and ambiguity, not unarguable material condition, defined the balance of power in the mind of key actors during the Cold War.

⁵⁹ On the overall scientific progress of behavioral approaches within international relations see the "Behavioral IR [sic] as a Subfield of International Relations," including Alex Mintz, "Why, Behavioral IR?," Patrick James, "Behavioral IR: Practical Suggestions," and Stephen G. Walker, "Back to the Future? Behavioral IR as a Case of Arrested Development," all in *International Studies Review* 9:1 (Spring 2007). On prospect theory Jack Levy provides a constructive critique of scientific progress in "Prospect Theory, Rational Choice, and International Relations," *International Studies Quarterly* 41:1 (March 1997), and Barbara Farnham (editor) *Avoiding Losses / Taking Risks: Prospect Theory and International Conflict* (University of Michigan Press, 1994). Specifically on poliheuristic models see Alex Mintz, "Chinese Choices: A Poliheuristic Analysis of Foreign Policy Crises 1950-1996," *Foreign Policy Analysis* 1:1 (2005).

⁶⁰ Of note see Yuen Foong Khong, *Analogies at War*, (op cit) and Keith Shimko, *Images and Arms Control* (op cit)

a particular key individual, usually a leader⁶¹. Even when such an approach generates improved understanding of the learning of this individual, there are many who argue that individuals themselves only explain a minor portion of the total variation in international relations⁶². If powerful causal theories operate at the level of the international system or the organizations within a state, then theories of specific individuals, no matter how empirically supported, are of limited utility in explaining the larger problems in international relations.

The limitations of cognitive approaches in living up to their universal billing may partially be an artifact of how they have been constructed. From Kahneman and Tversky's first *Science* article, early writing focused on *anomalies* where rational choice models failed to predict certain outcomes⁶³. This kind of disconfirming evidence gradually accumulated, but without a coherent theoretical framework cognitive psychology had difficulties in moving beyond a tool for the *ad hoc* bludgeoning of rationalism. Indeed, even some *advocates* of cognitive theories bound the generalizability and applicability of theories which they support⁶⁴. These earlier failings are being corrected as cognitive psychologists refine their own scholarship and

⁶¹ Janice Gross Stein, "Political Learning by Doing: Gorbachev as Uncommitted Thinker and Motivated Learner," *International Organization* 48:2 (Spring 1994) pages 155-183

⁶² Kenneth Waltz, *Man, the State, and War* (Columbia University Press, 1959).

⁶³ One of the more entertaining, but ultimately unfulfilling works in this vein is Richard Thaler's *The Winner's Curse: Paradoxes and Anomalies of Economic Life* (Princeton University Press 1994). Thaler produced more scholarly work with a stronger theoretical framework, and this particular book was written for a broader audience. However, while this book offered up a number of criticisms of rational choice theory's predictive value, it could too easily be dismissed as a collection of anecdotes and point criticisms, rather than an alternative theory. See Gary Becker, "The Nobel Lecture: The Economic Way of Looking at Behavior," *The Journal of Political Economy* 101: 3 (June 1993). In Thaler's defense, *Winner's Curse* was pitched to a more general audience than his other scholarly work.

⁶⁴ Nancy Kanwisher, "Cognitive Heuristics and American Security Policy," *Journal of Conflict Resolution* 33:4 (December 1989) is quite explicit in subordinating her cognitive model to other interest based rational models, essentially revisiting motivated bias.

social scientists begin borrowing more sophisticated elements of the cognitive psychology literature. However, cognitive approaches risk being perceived as an *ad hoc* hodge-podge of explanations for anomalous events, not a parsimonious general theory of behavior.

It is significant that one area where behavioral modeling has gained empirical and professional traction is financial analysis, where the focus is less on theoretical parsimony and elegance and more on useful decision making assistance⁶⁵. While academic experimental economics studies have had to deal with incentives of dubious value, financial modeling is responsible for billions of dollars worth of decision making every day⁶⁶. Traders compete against one another using proprietary models to generate strategies which they hope will allow them to outperform others. Working from the theoretical premises of Kahneman and Tversky⁶⁷, behavior finance theorists began back testing theories on historic trading and

⁶⁵ Again, returning to Lakatos' approach to scientific progress, it is not that other models fail critical tests, it is that they lack enough explanatory power to attract a critical mass of practitioners. The emergence of behavioral finance as an alternative to the strictly rationalist Capital Asset Pricing Model (CAPM) driven trading strategies provides a neat case study of this process. Perhaps no greater testament to behavior finance's ascendancy can be found after noting that behavioral finance is now one of the key learning areas in the Chartered Financial Analyst (CFA) program for certifying professional analysts. In June 2007 the CFA Institute and Boston Security Analysts Society hosted a conference on behavioral finance chaired by Burton Malkiel.

⁶⁶ John H. Kagel and Alvin Roth *The Handbook of Experimental Economics* (Princeton University Press, 1995) contains an overview of many of the critical experiments. Incentives include items such as coffee mugs, grades on a quiz, hypothetical situations, and even small sums of money. Social experimentation is limited by the inability to bring forward powerful incentives for large groups of individuals, and so is always open to the criticism by rationalists that higher stakes would engender more rational behavior.

⁶⁷ The importance of psychological factors in trading goes back at least as far as Benjamin Graham's parable of "Mr. Market" as a manic-depressive trading partner. Benjamin Graham, *The Intelligent Investor* (4th Revised Edition, Harper & Row 1973). However Kahneman and Tversky provided this insight with broader theoretical justification and a path towards formalization. Their success can be ascertained by noting that Graham's famous disciples, Warren Buffett and Charlie Munger, now routinely cite their work, as well as that of other behavioral finance theorists, in their elaboration of their investment philosophies. Peter D. Kaufman (editor) *Poor Charlie's Almanack* (sic), (PCA

pricing data during the 1980s, and later evolved these studies into simulations during the 1990s⁶⁸. During the early twenty-first century formal behavioral modeling exploded among professional traders. Unlike older trading strategies, that simply assumed that people make errors and ascribed those errors to *ad hoc* mania or motivated biases, some new trading strategies are grounded in predictive, formalized, and quantitative models of human behavior⁶⁹. But exploiting an anomaly, such as mispriced closed end funds, is different from indicting a research program⁷⁰.

Not only has academic development influenced trading, but traders and analysts are now feeding work back into academic *fora* to advance scientific progress⁷¹. Indeed, to refine their

Publications, 2005) Among Munger's more formal pieces, based in behavioral psychology, are his widely cited speech on the psychology of human misjudgment, available here: http://www.vinvesting.com/docs/munger/human_misjudgement.html [sic] and his Herb Kay undergraduate lecture given at University of California Santa Barbara, available here: <http://www.tilsonfunds.com/MungerUCSBspeech.pdf>

⁶⁸ Richard H. Thaler, *Quasi Rational Economics* (Russell Sage Foundation, 1994) compiles a number of Thaler's individual and coauthored papers on the subject. Thaler has moved this discipline forward, and is responsible for training numerous academics and professional traders.

⁶⁹ Precise investment formulae are obviously proprietary, and not even shared with paying clients. However a number of broader portfolio strategists do publish client notes that allude to the importance of formalized behavioral models that underpin their recommendations. See Michael Mauboussin and Kristen Bartholdson "A Tail [sic] of Two Worlds: Fat Tails and Investing," Credit Suisse investment strategy research (9 April 2002), James Montier, "Global Equity Strategy: The Gambler's Fallacy," (Dresdner Kleinwort Wasserstein, 23 January 2003), and Colin Camerer, *Behavioral Game Theory: Experiments in Strategic Interaction* (Princeton University Press 2003).

⁷⁰ Close end funds hold equity securities, but are themselves traded like equities. Ideally the price of the fund should equal the value of the assets, but often closed end funds trade at a discount to that price. See Richard H. Thaler with Charles M. C. Lee and Andrei Scheifer, "Closed-End Mutual Funds," in Thaler, *The Winner's Curse* (1994, op cit) pages 168-181.

⁷¹ Nassim Nicholas Taleb has been most notable for his popular books *Fooled By Randomness: The Hidden Role of Chance in the Markets and Life* (Random House 2001), and *The Black Swan: The Impact of the Highly Improbable* (2007). Taleb also publishes on technical finance, including his *Dynamic Hedging: Managing Vanilla and Exotic Options* (John Wiley and Sons, 1997) and academic matters "Statistics and Rare Events," *The American Statistician* 61:3 (August 2007)

models, professional traders and investment strategists are now funding their own surveys and experimental studies⁷². This feedback loop has allowed for theories to be refined, tested, and subject to the criticism of practitioners, experimenters, and theorists. So far the empirical track record has been good, with intuitive behavioralists, notably as Buffett and Munger, generating long term outperformance. Firms explicitly using behavioral finance trading strategies have not had the same infamous blowups as quantitative rationalist funds, such as Long Term Capital Management (LTCM)⁷³. However, rationalist models of investment allocation still remain dominant in the training of investment professionals.

To explain behavior cognitive approaches blend universal predictions, such as the importance of vivid events and the miscalculation of probabilities as part of prospect theory, with other more unique predictions, such as the role of anchors, metaphors, and motivated biases. The effect of anchors and metaphors cannot be stated without first specifying the nature of these phenomena. Moreover, to have scholarly utility we need to understand their origins, as well as their effects. It is at this juncture where theories of groups, whether imposed by organizational structure and self interest, or socially constructed, are useful

⁷² See James Montier, *Behavioral Finance: Insights into Irrational Minds and Markets* (John Wiley and Sons, 2002) and *The Seven Sins of Fund Management: A Behavioral Critique* (Dresdner Kleinwort Wasserstein, 18 November 2005) and “Who’s a Pretty Boy Then: Beauty Contests, Rationality, and Greater Fools,” (Dresdner Kleinwort Wasserstein, 17 February 2004).

⁷³ LTCM included amongst its directors Myron Scholes and Robert Merton. Using proprietary variants on the CAPM and option pricing formulae, LTCM made a number of highly leveraged trades to exploit short term pricing inefficiencies in the market. In 1998 it blew up spectacularly, necessitating the intervention of the Federal Reserve and a consortium of the major banks of Wall Street. LTCM has emerged as a byword for the failings of quantitative rational choice pricing models, although the roots of LTCM’s failure go beyond weaknesses in the formulae. See Roger Lowenstein, *When Genius Failed: The Rise and Fall of Long Term Capital Management* (Random House 2000) and Donald MacKenzie, “Long Term Capital Management and the Sociology of Arbitrage,” *Economy and Society* 32:3 (2003).

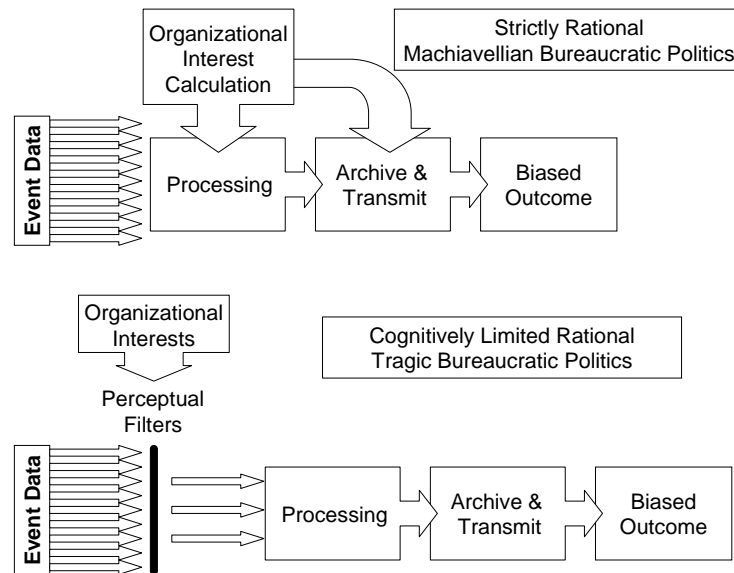
overlays on the psychological model. Where there are idiosyncratic effects at play, the cognitive approach can best be understood as the critical microfoundation for cultural and some bureaucratic approaches.

Bureaucratic Politics and Learning

Interest based approaches to learning and perception stress the organizational incentives that lead individuals to deliberately or unintentionally distort the perception or relay of information. The richest interest based tradition is that of bureaucratic politics, which was first formulated as such by Graham Allison, but which traces its roots back to Herodotus who sought to explain Greek-Persian relations by the interplay within Greek societies, and not through the structure of the international system⁷⁴ One problem with such theories is that it is not clear when organizational interests actually come into play. Some hold that interests engender a Machiavellian type of behavior that leads individuals to make decisions which further bureaucratic interests at the expense of a higher good, while others hold that bureaucratic interests create motivated biases which tragically cause bureaucracies to engage in pathological behavior at the expense of a higher good (see chart below). These two models, Machiavellian and Tragic, are both worth considering under bureaucratic politics.

⁷⁴ Graham Allison, "Conceptual Models and the Cuban Missile Crisis," *American Political Science Review* 63:3 (1969) pp 689-718. In both style and epistemological approach Herodotus is antithetical to his compatriot, Thucydides. Herodotus favored explanations that dealt with the interplay between individuals and groups within Athenian, Trojan, Egyptian, and Persian societies. See M. I. Finley, (editor) *The Portable Greek Historians* (Penguin Press, 1951).

Chart 1-2 : Causal Mechanisms in Bureaucratic Politics Approaches



There are advocates of a bureaucratic politics approach that are strictly rationalist, i.e. they believe that organizational interests lead individuals within an organization to make rational choices that suboptimize the performance of the state as a whole. Individuals may deliberately hold back information, suppress findings, or slant study results to further their own organizational ends. Drawing on the principle-agent framework they show how these interests cause the bureaucracy to behave in a manner inconsistent with the vision of those who design and use the organization to meet the needs of the state⁷⁵. These incentives can only be overcome, if at all, at times of national emergency when policies are pushed on the

⁷⁵ The case for the principle-agency disconnect is made forcefully in Terry Moe, "The New Economics of Organization," *American Journal of Political Science* 28 (1984) pages 739-777 and Jonathan Bendor and Terry Moe, "An Adaptive Model of Bureaucratic Politics," *American Political Science Review* 79 (1985) pages 755-774. Building on organizational incentives Moe went on to discuss optimizing organizational design to achieve desired results in education. See John Chubb and Terry Moe "Politics, Markets, and the Organization of Schools," *American Political Science Review* 82 (1988) pages 1065-1087.

bureaucracy from above, and that push is enforced over time⁷⁶. The behavior of individuals within this system provides the critical microfoundation upon which the theory is based⁷⁷. Organizations seek autonomy and power, and reward those individuals who further those ends⁷⁸. Among the military, the desire to achieve professional success, determined by promotion (and thus pay grade) is a powerful incentive for individuals to act in accordance with the objectives of the group⁷⁹. The group, because it controls the selection and career paths of its members, has the ability to select those individuals who offer the best service.

Alternatively, there are also those who argue that organizational interests may shape the cognitive framework through which incoming information is filtered, creating motivated biases which then distort perception. Organizational interests may cause learners to distort information during recording and transmission. Vertzberger argues that people within an organization “cannot afford to admit that their actions are motivated by bureaucratic routine and parochial thinking, that is, by their own interests, partly because they are not conscious

⁷⁶ Barry Posen, *The Sources of Military Doctrine* (Cornell University Press, 1984) makes the case that the bureaucratic politics which inhibited optimizing resources for generating military power among European countries were overcome as the threat level increased during the 1930s. In the absence of threat, counterproductive bureaucratic behavior characterized military planning within states.

⁷⁷ See Thomas Schelling, *Micromotives and Macrobehavior* (Norton and Company, 1978). Schelling explains how the incentives presented to the individual aggregate to outcomes which may be suboptimal when viewed strictly through a group level of analysis prism. See also Jon Elster, “Belief, Bias, and Ideology,” in Martin Hollis and Steven Lukes (editors), *Rationality and Relativism* (MIT Press 1982).

⁷⁸ Not only do they reward those who support the organization, they also have more largesse with which to reward those individuals. Thus an individual who successfully advances the interest of the organization has a larger probability of getting a piece of a larger pie.

⁷⁹ Arnold Kanter, “The Career Pattern of Air Force Generals,” *American Journal of Political Science* 21:2 (May 1977) pages 353-379.

of it”⁸⁰. In this instance the suboptimal result for the principle is a tragic consequence of cognition, rather than a calculated consequence of individual self interest. The cognitive filters put in place by individuals who must deal with complex information within their organization cause those individuals to make predictable filtering and weighting decisions that are not strictly Bayesian.

Finally, there are those who argue, under the rubric of bureaucratic politics, what is in essence a cultural theory of causality. They argue that an individual’s conception of bureaucratic interest goes beyond the purely material concerns of autonomy and resources and includes protection of an intangible organizational essence or self image⁸¹. I argue that this is analytically distinct from material bureaucratic politics explanations as commonly understood, and which I will treat separately in a following section exploring the ideational approach to learning.

The tension between strictly rationalist, cognitive, and even cultural causal mechanisms all clustering under the umbrella of bureaucratic theory has its roots in a separation between political science epistemology and the microeconomic theory upon which political scientists have built some of their theories. In microeconomics maximizing utility has a very specific definition, the maximization of the value of net assets under management. Political scientists have broadened this definition to allow for the maximization of units of utility (“utils”), and

⁸⁰ Yaakov Y. I. Vertzberger, “Bureaucratic-Organizational Politics and Information Processing in a Developing State,” *International Studies Quarterly* 28:1 (March 1984) page 71.

⁸¹ See David E. Johnson, *Fast Tanks and Heavy Bombers: Innovation in the US Army 1917-1945*, (Cornell University Press) 1988 and Frank P. Donnini, *Battling for Bombers: The US Air Force Fights for Its Modern Strategic Aircraft Programs* (Greenwood Press) 2000.

then proceeded to allocate utility to a far broader set of factors beyond material assets. Thus things such as cognitive consistency, happiness, or “essence” can be termed to have a utility, indeed, a utility above a substantial sum of fungible assets⁸². This is not a recent problem, and in fact it is plagued the formulation of bureaucratic politics theory from its very early days⁸³. At its worst this can seemingly make rational choice theory unfalsifiable if analysts adopt broad or inconsistent definitions of “utils”, but even in its less extreme forms it can make methodical inquiry more problematic as distinct causal mechanisms are conflated.

This dissertation will adhere to an interest based view of bureaucratic politics. Within bureaucratic politics I will group the strands of Machiavellian and Tragic bureaucratic politics. One is based on strictly rationalist theory arguing that individuals respond to incentives and structure their behavior to maximize the success of their organization within those organizational incentives. A second strand, informed by cognitive science, introduces the concept of motivated bias as an intervening variable between interests and choices. The tragedy being that even if individuals were not out to deliberately privilege organizational interests, they are prone to do so because of bias that distorts the evaluation of information.

⁸² Steven E. Finkel, Edward N. Muller and Karl-Dieter Opp, “Personal Influence, Collective Rationality, and Mass Political Action,” *American Political Science Review* 83:3 (September 1989), pages 885-903; Michael W. Macy, “Review of Karl-Dieter Opp *The Rationality of Political Protest*” *Contemporary Sociology* 20:1 (January 1991) pages 67-68; and Margaret R. Somers, “‘We’re No Angels’: Realism, Rational Choice, and Relationality in Social Science,” *American Journal of Sociology* 104:3 (November 1998) pages 722-784.

⁸³ One of the seminal works of bureaucratic politics as applied to foreign policy is Morton Halperin, *Bureaucratic Politics and Foreign Policy* (Brookings Institution, 1974). Halperin introduces the concept of the “essential core”, which in all but name is an organizational culture. Organizational culture may be a valid explanatory theory, and indeed, it is one that this dissertation will examine in more detail. However it is analytically distinct from the strictly rationalist theory as used by Moe and many others. This analytical distinction suggests that we keep these theories separate, especially as they may generate conflicting predictions about behavior.

The critical common theme among theories of bureaucratic politics is that organizations have an incentive to increase autonomy⁸⁴. A necessary condition of maximizing resources under control is that the bureaucracy needs to be able to wield control. Autonomy also implies flexibility, which allows an organization to continue to respond to and shape its environment with a minimum of constraints. When an organization loses independence to other organizations it loses the ability to allocate resources without incurring substantial trading costs, and thus organizations will fight encroachment and, especially, subsumation⁸⁵. Indeed, in a modern Miltonian formulation, some rationalist argue that an organization may actually trade partial control over some resources in order to secure independent control over a smaller set of resources⁸⁶. Sapolsky does not, however, offer a hard and fast rule for evaluating the trade off between resources and autonomy (or scope and authority).

Specifically for military organizations we can specify three levels at which we would expect behavior that could be explained by bureaucratic politics. At each level the organizational elements will compete with one another for resources and autonomy, and that competition should be manifest in their efforts to draw lessons from the military and naval events of the

⁸⁴ See Harvey Sapolsky, *The Polaris System Development: Bureaucratic and Programmatic Success in Government* (Harvard University Press) 1972 and Stuart J. Kaufman, "Organizational Politics and Change in Soviet Military Policy," *World Politics* 46 (April 1994) pages 355-382.

⁸⁵ Lauren H. Holland, and Robert Hoover, *The MX Decision: A New Direction in US Weapons Procurement Policy?* (Westview Press, 1985)

⁸⁶ Milton noted that it was "better to reign in hell than serve in heav'n" *Paradise Lost*, Book 1, Line 263. Sapolsky, *The Polaris System Development* (op cit) makes the same point on p. 54-60 when he notes that "[d]espite its goal of complete autonomy, the Special Projects Office did avoid seizing complete control of certain functions to which it could legitimately lay claim... Forcing the issue of control, though possible, seemed to be unnecessary and might ultimately antagonize enough high-ranking naval officers that a strong coalition of FBM [Fleet Ballistic Missile] opponents would be formed" page 57.

Russo-Japanese War. At the highest level, members of military bureaucracies will see a trade off between military and civil expenditures, colloquially known as “guns versus butter”, and will argue for the resources of the State to be devoted to military projects.

HB1: Members of the armed forces will recognize a “guns versus butter” tradeoff, and argue for increased spending on naval and/or military programs

One level down within organizations, we see the distinction between different services. The Navy and Army (and, by the middle of the twentieth century, the Air Force) should all be competing for a share of overall military resources and for autonomy. Just as civil and military interests should clash, the naval and military interests within the larger armed forces should clash as well. Specifically in the case of the Russo-Japanese War it makes sense to look at the Navy and the Army as the two institutions that should be competing for resources, as there was no meaningful analysis of air power in the Russo-Japanese War⁸⁷.

HB2: Observers affiliated with the naval and military services should draw lessons that privilege their own service over the other service.

⁸⁷ In the 1930s one writer did speculate about how air power would have influenced operations, and even in the British *Official History (Naval and Military)*, which was completed in 1920, offered some tentative speculation about the possible effects of airborne reconnaissance had it been available, but these were the only documents to indulge in this sort of speculation. Alexander H. C. Kearsey *A Study of the Strategy and Tactics of the Russo-Japanese War 1904 Illustrating the Principles of War and the Field Service Regulations* (Gale & Polden, no date, but catalog indicates 1935?), and Great Britain Committee of the Imperial Defence (Historical Section) *Official History (Naval and Military) of the Russo-Japanese War Volume 3: San-De-Pu, Mukden, The Sea of Japan* (His Majesty's Stationary Office 1920).

Further below the level of the armed force is the level of the branch of service. Within the armies of the early twentieth century the major branches were the infantry, the artillery, and the cavalry⁸⁸. The branches that have appeared within modern navies, including submariners, aviators, surface offices, and, in some circumstances nuclear surface and nuclear submarine officers, did not exist at the time of the Russo-Japanese War. This hypothesis will therefore be only applied to branch competition within the various armies. Within the spending devoted to the military, we would expect to see branches competing for preferential a share, and we would expect to see them arguing for their own primacy by stressing their decisive effects upon the battlefield.

HB3: Observers within the military should draw lessons that favor increases in the resources or autonomy of their own branch of service.

Finally, we have the problem of distinguishing between Machiavellian bureaucratic politics and tragic bureaucratic politics. Many of the propositions and behaviors are generated by these two strands have indistinguishable roots. In one key respect, however, the causal mechanisms point to different sets of behaviors. Machiavellian operators will, as has been argued, *selectively* choose where to push for autonomy and resources in such as way as to maximize their overall long term assets under autonomous management⁸⁹. Tragic actors operate under no such compunctions, and cognitive theories contingent upon motivated bias offer no reason why some opportunities will be contested while others will be allowed to

⁸⁸ Militaries also included some minor branches, such as engineers, medical officers, chaplains, and quartermasters.

⁸⁹ Sapolsky (op cit) and Greenwood, Ted. *Making the MIRV: A Study in Defense Decision Making* (JB Lippincott Co, Ballinger Publishing) 1975 pages 52-57

pass. Indeed, proponents of the motivated bias approach are quite explicit on the inability of people operating under motivated bias to make tradeoffs between multiple goals. Lebow and Stein note that:

[c]ognitive psychologists argue that human beings tend to avoid ‘trade- offs’ among important values. Rather than recognize that one policy may advance important objectives at the expense of other valued goals, people are more likely to see their choices as supportive of all their objectives. As they move toward a decision, they may alter some of their earlier expectations or establish new estimates to strengthen the case for their preferred course of action.

The failure to recognize trade-offs leads advocates of a policy to advance multiple, independent, and mutually reinforcing arguments in its favor. They become convinced that the policy in question is not only preferable to other alternatives but that it can achieve all their goals. Opponents similarly attack a policy as ill-considered in all its consequences. Ordering cognitions in this way helps people to make difficult or costly choices because nothing need be sacrificed⁹⁰.

Thus, the ability to make calculated trade-offs while in pursuit of organizational power maximization is a critical distinction between Tragic and Machiavellian approaches to bureaucratic politics⁹¹. Where individuals wrestle with tradeoffs, they are operating in the realm of a Machiavellian calculus. Where they simultaneously pursue autonomy and resources, they may be driven by psychological causes.

This is especially the case for this specific research design, where my interest is in predicting patterns of perception, not on policy change. Noting perceptions of fact has a relatively

⁹⁰ Lebow, Richard Ned, and Janice Gross Stein. *We All Lost the Cold War* (Princeton University Press, 1994) page 64

⁹¹ Of course it is possible to add ever more nuanced layers of motivational bias to explain away observed trade-off behavior. However the very complexity of such explanations would undercut the approach. Occam’s Razor would suggest that the rational approach would be of more use than a complex and layered motivational bias approach in this eventuality. As a theory of behavior motivated bias’ explanatory power comes from its simplicity.

small cost, while changing policy requires the expenditure of political capital and other resources. In explaining policy change advocates of motivated bias theory can always fall back on the position that objectives are constrained by resources, and so actors that are resource constrained may pick and choose policy fights based on those resource constraints, even if they suffer from motivated bias⁹². At the level of the cognitive filter on recording perceptions such iterated Machiavellian computation should not matter. Moreover, in groups that face superficially similar conditions (e.g., the US and Royal Navy) the intricacies of the rational calculation of organizational interest are unlikely to yield identical behaviors. This provides us with our fourth proposition, designed to distinguish between rational-Machiavellian and cognitive-tragic bureaucratic politics theories.

HB4: The pursuit of simultaneous material goals and autonomy for the organization indicates the operation of a motivated bias, while a more calculated approach recognizing trade-offs indicates a rational organizational politics explanation.

The Ideational Research Program

The positivist ideational research program relies on cognitive microfoundations, but emphasizes certain psychological elements while simultaneously shifting the level of analysis

⁹² Indeed, this is part of Sapolsky's argument. However Sapolsky goes beyond this short term explanation to stress the calculated benefit of long term interaction. "Much of this self imposed restraint can be attributed simply to the advantages of pursuing some other immediate objective simultaneously, and yet there remains a measure of restraint that seems to have been exercised in order to avoid an accumulation of animosity that would have hurt the program at a later date" *Polaris System Development* (op cit) p 55. Sapolsky differentiates between restraint caused by calculation of interest and restraint due to resource constraints in his narrative on the Polaris case, but unfortunately does not provide a generalized method for identifying these differences *ex ante*.

up from the individual to the social group. These different emphases suggest that learning patterns will not be universal. Instead, the social group plays an important role in setting the “default values” of heuristics, delimiting options, and conditioning behavior. Within international security studies the concept of strategic culture has been the most prominent application of ideational analysis, although within the study of international relations and foreign policy other cultural approaches have been advanced⁹³.

Strategic culture as a field of inquiry emerged during the Cold War as US military planners grappled with deterrence concepts⁹⁴. There were exactly two data points on the use of nuclear weapons in warfare, both of which concerned their use against a non-nuclear opponent. Our adversary, the USSR, was not a party to these events. In addition the USSR itself had direct experience with only four wars⁹⁵. Thus the ability to draw inference from such a small data set was minimal. Some US strategists were concerned that a deterrence framework that was developed as a data free thought experiment within institutions like RAND was unstable, especially if the USSR didn’t necessarily agree with the same premises

⁹³ *International Security* 19:4 (Spring 1995) contained an entire forum entitled “Does Strategic Culture Matter” which included Stephen Peter Rosen, “Military Effectiveness: Why Society Matters,” Alastair Iain Johnston, “Thinking About Strategic Culture,” and Elizabeth Kier, “Culture and Military Doctrine: France Between the Wars,”. Shortly thereafter these became Rosen *Societies & [sic] Military Power: India and Its Armies*, (Cornell University Press, 1996); Iain Johnston *Cultural Realism: Strategic Culture and Grand Strategy in Chinese History* (Princeton University Press, 1995); and Kier *Imagining War: French and British Doctrine Between the World Wars* (Princeton University Press, 1997). For a criticism of the narrower approach of strategic culture, as compared to the broader cultural theory, see John S. Duffield, “Political Culture and State Behavior,” *International Organization* 53:4 (Autumn 1999) pp 765-803.

⁹⁴ While most of the research pertained to US and Soviet strategic cultures, there was some work done on the Chinese as well. See Allen S. Whiting, *The Chinese Calculus of Deterrence: India and Indochina* (University of Michigan Press, 1975). Whiting focused on how Chinese culture and historical experience influenced the way that they perceived actions by India, the USSR, and the US.

⁹⁵ The Russian Civil War, the Russo-Finnish War, the Second World War, and the Nomonhan War.

that US strategists used in their models⁹⁶. The result was an inquiry focused on understanding Soviet patterns of thinking, which turned up some evidence supporting a cultural theory⁹⁷.

As originally framed, strategic culture was explicitly cognitive in its microfoundations. In the late 1970s Snyder wrote that:

[s]trategic culture can be defined as the sum total of ideas, conditioned emotional responses, and patterns of habitual behavior that members of a national strategic community have acquired through instruction or imitation and share with each other with regard to nuclear strategy. In the area of strategy, habitual behavior is largely cognitive behavior. This is true not only of the development of strategic doctrines but also of the weapons acquisition process and of crisis decisionmaking, during which the possible use of nuclear weapons might be considered. Because analytic argumentation lies at the core of such behavior, this report will emphasize the cognitive component of the Soviet strategic culture. In particular, it will discuss the body of attitudes and beliefs that guides and circumscribes thought on strategic questions, influences the way strategic issues are formulated, and sets the vocabulary and conceptual parameters of strategic debate... We assume that strategic cultures, like cultures in general, change as objective conditions change. But we also assume a large residual degree of continuity. Individuals are socialized into a mode of strategic discourse and acquire a fund of strategic concepts that evolve only marginally over time... Pre-existing strategic notions can strongly influence doctrinal and organizational adaptation to new technologies. Rationales can outlive the conditions under which they were developed and to which they were most appropriate⁹⁸.

⁹⁶ Attempts to bring empirical evidence to the discussion were taken by political scientists. Critical works include Alexander George and Richard Smoke, *Deterrence in American Foreign Policy* (Columbia University Press, 1974); Paul Huth and Bruce Russett, "What Makes Deterrence Work? Cases from 1900 to 1980," *World Politics* 36:4 (1984) pages 496-526; and Paul Huth "Extended Deterrence and the Outbreak of War," *American Political Science Review* 82:2 (1988) pages 423-43.

⁹⁷ The framing work was Jack L. Snyder, *The Soviet Strategic Culture: Implications for Limited Nuclear Operations*, (September 1977) RAND Corporation: Project Air Force R-2154-AF; see also William P. Baxter, "Soviet Perceptions of the Laws of War," in William D. Vernon, *Soviet Perceptions of War and Peace* (1981) National Defense University Press; and Raymond L. Garthoff, *The Soviet Image of Future War* (Public Affairs Press 1959).

⁹⁸ Jack Snyder, *The Soviet Strategic Culture* (1977, op cit), pp 8-9

While Snyder does not use the precise terminology of Tversky and Kahneman, he invokes many of the same concept. “A large residual degree of continuity” and rationales that outlast “the conditions under which they were developed” are functionally equivalent to cognitive anchors which inhibit accurate updating of confidence levels and probability estimates. “Conditioned emotional responses” echo Khong’s formulation of analogical reasoning.

References to specific battles, either from a country’s first hand experience or from military history more broadly, as well as other military events or concepts (such as the Maginot Line), may be seen as evidence of a symbolic discourse⁹⁹. There are symbols which permeate strategic culture discussions, some of which are more broadly cultural in origin and others are specific to strategic cultures¹⁰⁰. Within the idiosyncratic culture of a military or national security elite, these symbols are references to larger concepts which may prescribe behavior and opinions¹⁰¹. The strategic use of these symbols is a dialog, or discourse, that elicits

⁹⁹ The inherent ambiguity of a symbol bereft of context can be clearly seen by the Maginot Line. As a series of fortifications the line really was extremely difficult to penetrate. The Germans responded by attacking in a different area, flanking the Line, and defeating France. Yet the Line remains a symbol of obsolete passive defense. See William Allcorn, *The Maginot Line: 1928-1945* (Osprey Publishing, 2003); Ernest May, *Strategy Victory: Hitler’s Conquest of France* (Hill and Wang, 2000); and John J. Mearsheimer, *Conventional Deterrence* (Cornell University Press, 1985).

¹⁰⁰ Johnston, Alastair Iain, *Cultural Realism* (op cit). Those specific to strategic cultures usually reference events in military history, while broader symbols may come from diplomatic history. Some wartime events are so salient that they permeate the broader culture of a nation, and not just its military, e.g., the role of Pearl Harbor within the US. John A Tirpak, “The Space Commission Reports,” *Air Force Magazine* 84:3 (March 2001) pages 30-35; Thomas S. Moorman Jr., *The Commission to Assess US National Security Space Management and Organizations*, presentation with text, Harvard Program on Information Resources Policy, Seminar on Intelligence, Command, and Control (November 2001).

¹⁰¹ Stuart J. Kaufman, *Modern Hatreds: The Symbolic Politics of Ethnic War* (Cornell University Press, 2001).

responses even from those who are not directly part of the debate¹⁰². Even historical figures may rise to the level of symbols. People such as Charles de Gaulle, Clausewitz, Sun Tzu, and Alfred Thayer Mahan left strategic legacies that can be evoked in different contexts¹⁰³. In his later work, Kaufman is more explicit in the cognitive microfoundations of the symbolic politics argument, but not all theoreticians have fully specified these microfoundations¹⁰⁴.

The specific experiences of a military in recent combat may exert undo influence on future operations of that military. The availability heuristic and Jervis' "last war" variant on this heuristic provide the cognitive underpinnings for such influence. Forty years after the Russo-Japanese War, and in very different circumstances, 1945 saw the Soviets destroy Japanese armies in Manchuria. This new Manchurian campaign exerted considerable influence on Soviet military planning for conventional warfare throughout the Cold War, and became a focus of study as US planners tried to understand the Soviet way of war¹⁰⁵.

¹⁰² Jan Kubik, *The Power of Symbols Against the Symbols of Power: The Rise of Solidarity and the Fall of State Socialism in Poland* (Penn State Press, 1994).

¹⁰³ Gordon, *A Certain Idea of France*, (op cit); Michael Handel, *Clausewitz and Modern Strategy* (Routledge, 1986). The symbolic use of these personages may, indeed, overwhelm the actual substance of their historical writings. Mearsheimer and others have criticized a self serving introduction to Sun Tzu by Liddell-Hart, as well as Liddell-Hart's introduction and editing of English translations of Rommel's papers and postwar interviews with German generals. See John J. Mearsheimer, *Liddell-Hart and the Weight of History* (Cornell University Press, 1989) and Brian Bond, *Liddell-Hart: A Study of His Military Thought* (Rutgers University Press 1977). The controversial works are Liddell-Hart (ed) *The German Generals Talk* (Harper Perennial 1971), *The Rommel Papers* (Da Capo Press, 1982), and "Forward," in Samuel B. Griffiths, (editor and translator) Sun Tzu *The Art of War* (Oxford University Press, 1963).

¹⁰⁴ Stuart J. Kaufman, "Symbolic Politics or Rational Choice? Testing Theories of Extreme Ethnic Violence," *International Security* 20:4 (Spring 2006).

¹⁰⁵ David M. Glantz, *August Storm: Soviet Tactical and Operational Combat in Manchuria, 1945* Leavenworth Paper 8, Combat Studies Institute: US Army Command and General Staff College (June 1983).

The importance of the idiosyncrasies of whatever made up “the last war” have been cited in multiple cultural studies of warfare¹⁰⁶.

The strategic culture literature is also redolent with references to analogies and metaphors. Certain critical events, only some of which were drawn directly from the historical experience of a military, form powerful images within the minds of a generation of military planners. One example is Schlieffen’s fascination with the ancient Roman battle of Cannae, in which the Carthaginians, under Hannibal, defeated a larger Roman Army, killing its commanders and perhaps as many as 50,000 Roman and allied soldiers¹⁰⁷. In the battle Hannibal put his weakest troops in front, and had them fall back, drawing the Romans deeper into the Carthaginian position, where they found themselves encircled by superior Carthaginian troops who had been waiting in the flanks. Cannae was the greatest single defeat of the Roman empire, with more than twice the casualties of Publius Quinctilius Varus’ disastrous defeat in the Teutoburg forest¹⁰⁸. In Schlieffen’s mind, Cannae represented a generic model of encirclement that could be applied on a strategic scale to the entire

¹⁰⁶ In addition to the copious literature on the Soviet case, see also Marc Trachtenberg, *History & [sic] Strategy*, (Princeton University Press, 1991). For an interesting application of this “last war” to the Cold War mindset and a discussion of symbolic politics see Philip H. Gordon, *A Certain Idea of France: French Security Policy and the Gaullist Legacy* (Princeton University Press, 1993).

¹⁰⁷ Terence Michael Holmes, “Classical Blitzkrieg: The Untimely Modernity of Schlieffen’s Cannae Programme,” *Journal of Military History* 67:3 (July 2003), pages 745-771; Gerhard Ritter, *The Schlieffen Plan: Critique of a Myth* (Praeger Press, 1958). The debate over the seriousness of the Schlieffen “plan” as a warfighting document is summarized in Keir Lieber, “The New History of World War I and What It Means for International Relations Theory,” *International Security* 32:2 (Fall 2007) pages 155-191. Schlieffen’s own study is available as von Schlieffen, General Fieldmarshal Count Alfred *Cannae* (translated 1931) online from the Combined Arms Research Library, US Army Command and General Staff College: <http://www-cgsc.army.mil/carl/resources/csi/Cannae/cannae.asp>

¹⁰⁸ Varus’ defeat was immortalized in Robert Graves’ *I Claudius*, which itself was drawn largely from the Histories of Seutonius.

western theater of a war against France¹⁰⁹. Schlieffen's concept of Cannae influenced at least a generation of German military planners prior to the First World War, and likely influenced a second generation as Cannae became generalized into *kesselschlacht*, or cauldron battle, which was operationalized by what is now known as *blitzkrieg* in the Second World War¹¹⁰.

Finally, some of the concrete manifestations of a military's culture are built on symbols. The lance, as a weapon of attack for cavalry, persisted well into the twentieth century because cavalrymen had been trained to think of the lance as critical to their survival in the battlefield¹¹¹. Effective use of the lance and cutlass kept cavalrymen alive during a period of great physical risk. Breaking the cavalry away from the *arme blanche*¹¹² was tantamount to asking them to give up that which kept them alive, and trust their very survival to new weapons. The *arme blanche* assumed a symbolic meaning that was distinct from its utility in

¹⁰⁹ Tactically envelopment and double envelopment were powerful and effective maneuvers throughout the history of warfare. Hannibal's tactics were mirrored in the famed Zulu "fighting bull" formation, were also applied successfully to the battle of Cowpens in the US War of Independence, used in many of Napoleon's battles, and used in German operations on the Eastern front from 1941-1943. See Lawrence E. Babits, *A Devil of a Whipping: The Battle of Cowpens* (University of North Carolina Press, 2001); Friedrich Wilhelm von Mellenthin, *Panzer Battles: A Study of the Employment of Armor in the Second World War* (translated by H. Betzer, 1956 University of Oklahoma Press); Donald R. Morris, *The Washing of the Spears: A History of the Rise of the Zulu Nation Under Shaka and Its Fall in the Zulu War of 1879* (Simon & Schuster, 1965). However Schlieffen applied the *tactics* of a single battle to the *operations* across an entire theater. What Hannibal and others did on a battlefield Schlieffen planned to do on a whole front line. See Gunther E. Rothenberg, "Moltke, Schlieffen, and the Doctrine of Strategic Envelopment," in Peter Paret, (ed) *Makers of Modern Strategy* Second Edition (Princeton University Press 1986) pages 296-325

¹¹⁰ Robert M. Citino, *The Path to Blitzkrieg: Doctrine and Training in the German Army, 1920-1939* (Lynne Rienner, 1999). The term "blitzkrieg" was not a German term of the art, but an Anglo name rendered in German given to the German tactical system employed with devastating effect against France and Poland.

¹¹¹ Edward L. Katzenbach, Jr. "The Horse Cavalry in the Twentieth Century," Carl Friedrich and Seymour Harris (editors) *Public Policy* volume VIII (1958) pages 120-149. This point will be further developed in the chapter on the cultural-cognitive approach.

¹¹² The *arme blanche* or the "white arm" is a term which refers to the weapons of traditional cavalry; the sword, the lance, and the axe. It has also been used to refer to the infantry's use of bayonets.

the battlefield, and even when battlefield utility was called into question, justifications for retaining the *arme blanche* were offered based on its symbolic meaning¹¹³.

Outside of strategic culture, the general approach to culture and ideas within foreign policy has also been recast in a cognitive framework¹¹⁴. In his study of decisionmaking, George noted that beliefs provide policymakers with “a relatively coherent way of organizing and making sense of what would otherwise be a confusing and overwhelming array of signals and cues picked up from the environment”¹¹⁵. In his own study on strategic choice, Rhodes builds on George to explicitly define these ideas as a shared cultural set of ideas, in what he terms to be a “cultural-cognitive” explanation for strategic choices by the US government in the 1890s¹¹⁶. Moreover, Rhodes argues that while culture is sticky, it is not inviolate. Specifically, “significant changes in material realities which yield social crisis may stimulate a reappraisal of beliefs and that, when core beliefs have been challenged, these realities may lend strength to one competing set of beliefs over another”¹¹⁷.

¹¹³ Katzenbach, “The Horse Cavalry” (op cit).

¹¹⁴ Prior to the introduction of cognitive microfoundations, earlier students of foreign policy analysis noted the importance of shared cultural ideas, but did not explicitly draw the links between these ideas, perception, and policy. On the various “waves” of foreign policy scholarship see Laura Neack, Jeanne A. K. Hey, and Patrick Haney. “Generational Change in Foreign Policy Analysis,” in Patrick Haney, Jeanne Hey, and Laura Neack (editors), *Foreign Policy Analysis: Continuity and Change in Its Second Generation* (Prentice Hall, 1995)

¹¹⁵ Alexander L. George, *Presidential Decisionmaking in Foreign Policy: The Effective Use of Information and Advice* (Westview 1980), page 57

¹¹⁶ Edward Rhodes, “Explaining Strategic Choices in the 1890s,” *Security Studies* 5:4 (1996) pages 73-124. Rhodes’ specific argument draws on the influence of Mahan’s concept of international power on civil and military policymakers.

¹¹⁷ Rhodes, “Explaining Strategic Choices” (op cit) page 78.

The cultural approach differs from the more general psychological theories in an important respect. While the psychologists stress the generality of their predictions, by showing that individuals are subject to the same heuristics and biases; cultural theories stress the culturally constructed and idiosyncratic nature of many of the more powerful heuristics and biases. Anchors, which serve to inhibit updating, are not identical for all people, but are the path dependent result of historical events and positions upon certain groups¹¹⁸. Symbols also take on different meanings depending on the specific context and audience in which they are interpreted¹¹⁹. Analogies mean different things to different groups. For example, Munich stands in the US mind as a lesson to stand firm when confronted with aggression, while in the Soviet mind it indicated that capitalist countries would work together to thwart Soviet ambitions¹²⁰. In the Czech and Polish minds Munich indicated that security guarantees from the Great Powers were worthless, and that it was necessary to be responsible for one's own defense and have multiple Great Power patrons¹²¹.

Strategic culture has generated some interesting findings. Yet selecting the right group for analysis has been a recurring problem, and there is no agreement within the literature on how to proceed. The continued subdivision of culture (a society), to strategic culture (a

¹¹⁸ Gordon, *A Certain Idea of France* (op cit); Kier *Imagining War* (op cit).

¹¹⁹ Kubik, *Symbols of Power* (op cit) shows how different actors attempts to capture the same symbols met with different results given the broader discourse. See also Peter Lange, Cynthia Irvin, and Sidney Tarrow "Mobilization, Social Movemenets and Party Recruitment: The Italian Communist Party Since the 1960s," *British Journal of Political Science* 20:1 (January 1990) pages 15-42; and Cynthia Irvin, *Militant Nationalism: Between Movement and Party in Ireland and the Basque Country* (University of Minnesota Press, 1999).

¹²⁰ Khong, *Analogies at War*, (op cit)

¹²¹ Piotr Stefan Wandycz, *The Twilight of the French Eastern Alliances 1926-1936: French-Czecho-Slovak-Polish Relations from Locarno to the Remilitarization of the Rheinland* (Princeton University Press, 1988).

military), to an organizational strategic culture (a service within a military), to a strategic organizational culture (a branch of a service in the military) to organizational culture (a regiment within a branch within a service within a military) to cohorts within these cultures does tend to create methodological complexity, without necessarily generating a proportional increase in explanatory value¹²². Ouchi and Wilkins have argued that such disaggregation is only relevant under very specific circumstances; including a long history, a stable membership base, an absence of institutional alternatives, specified interaction among members, and a clear mechanism of identifying and vetting members of the organization¹²³. Even under all of those circumstances the additional explanatory leverage gained by fragmenting the cultural groups tends to be minimal¹²⁴.

To try and reconcile these issues I examine strategic culture primarily at the level of the service of the military within a state. Given the time period, this means the Navy and the Army. In some circumstances I make specific service level predictions about the hypothesized operationalization of cultural symbols and analogies¹²⁵.

¹²² On this point see Duffield, "Political Culture and State Behavior," (op cit), who attacks Kier's disaggregation of the military culture into the competing branch culture, making her approach cumbersome and open to the charge of being somewhat *ad hoc*.

¹²³ Alan L. Wilkins and William G. Ouchi "Efficient Cultures: Exploring the Relationship Between Culture and Organizational Performance," *Administrative Science Quarterly* 28:3 (September 1983) pages 468-481

¹²⁴ William G. Ouchi, and Alan L. Wilkins "Organizational Culture," *Annual Review of Sociology* 11 (1985) pages 457-483; William G. Ouchi, "Markets, Bureaucracies, and Clans," *Administrative Science Quarterly* 25 (1980) pages 129-141, Michael Keeley, "Organizational Analogy: A Comparison of Organismic and Social Contract Models," *Administration Science Quarterly* 25 (pages 339-362)

¹²⁵ Because of its reserved nature within the larger society, and especially because of the socialization mechanisms of late nineteenth century militaries (in which our observers were matured) the Ouchi and Wilkins approach is not unreasonable. Still, for reasons of parsimony, routinely breaking analysis into branches will not be routine. On the military as a reserved domain see Juan J. Linz and Alfred

In terms of broad theoretical propositions, a cultural theory will not be inconsistent with some of the cognitive propositions. The critical difference will be on the emphasis of specific (and potentially contradictory) symbols, metaphors, and analogies among cultural groups which function as cognitive anchors and easily available heuristics in the interpretation of new event data. Thus:

HC1: Individuals within a cultural group will share a common use and interpretation of historical events which function as anchors and decision aids, and among members of different cultural groups both the use and interpretation of these symbols may differ.

Learning within Military Organizations

This dissertation specifically explores issues of military learning. It is therefore appropriate to review the literature which exists on this topic. Very little has been written about learning, *per se*, within a military context¹²⁶. There is, however, a vibrant literature on military innovation¹²⁷. Innovation, however, is analytically distinct from learning. As already noted,

Stepan *Problems of Democratic Transition and Consolidation* (Johns Hopkins University Press, 1996); Alon A. Peled, *Question of Loyalty: Military Manpower Policy in Multiethnic States* (Cornell University Press, 1998); and Bjorn Moller, "The Need for an Alternative NATO Strategy," *Journal of Peace Research* 24:1 (March 1987) pages 61-74.

¹²⁶ The political science literature that exists, and which has already been noted in passing throughout this chapter, is focused on how decision makers learn about the efficacy of force, or about the intentions of other international actors, and is thus more broadly classified comparative foreign policy and decisionmaking.

¹²⁷ An excellent study of the state of the art is to be found in Adam Grissom, "The Future of Military Innovation Studies," *Journal of Strategic Studies* 29:5 (October 2006) pages 905-934. Among

some research programs allow that individuals may learn lessons, but organizations may not implement those lessons for a variety of disparate reasons¹²⁸. Some of the innovation literature notes that particular individuals may have an idea (presumably a result of learning), but then they need to inject that idea into policy through a variety of mechanisms. Billy Mitchell and the use of airpower against the surface navy is one often used example, John Boyd's concepts of the OODA loop, energy/maneuverability theory, and the light-weight fighter are others that are routinely cited¹²⁹. Furthermore, some investigations of learning by

this rich literature some of the more essential works are Allan R. Millett, and Williamson Murray (editors) *Military Effectiveness* (3 volumes, including The First World War, The Interwar Period, and The Second World War) (Routledge, 1988); *Military Innovation in the Interwar Period* (Cambridge University Press, 1996); Barry R. Posen, *Sources of Military Doctrine* (op cit); Stephen Peter Rosen, *Winning the Next War: Innovation and the Modern Military* (Cornell University Press, 1994); Matthew Evangelista, *Innovation and the Arms Race: How the United States and the Soviet Union Develop New Military Technologies* (Cornell University Press 1988); Jonathan Shimshoni, "Technology, Military Advantage, and World War One" (op cit); Harvey M. Sapolsky, "On the Theory of Military Innovation," *Breakthroughs* IX:9 (Spring 2000) pages 35-39; Jonathan M. House, *Combined Arms Warfare in the Twentieth Century* (University Press of Kansas, 2001); Timothy Lupfer, *The Dynamics of Doctrine: The Change in German Tactical Doctrine During the First World War* (Leavenworth Paper 4, US Government Printing Office, 1981); James S. Corum, *The Roots of Blitzkrieg: Hans von Seeckt and German Military Reform* (University Press of Kansas, 1994); Christopher Bellamy, *The Evolution of Modern Land Warfare: Theory and Practice* (Routledge 1990); and Shimon Naveh, *In Pursuit of Military Excellence: The Evolution of Operational Theory* (Frank Cass, 1997).

¹²⁸ Reasons could include the systemic demands of the balance of power, bureaucratic politics, or cultural inhibitions. Conversely, even successful innovation need not be predicated on learning, it could be a result of evolutionary natural selection as states with poor militaries, or poorly performing military branches within a state, are destroyed in battle. See Lars-Erik Cederman, *Emergent Actors in World Politics: How States and Nations Develop* (Princeton University Press, 1997); and Robert Axelrod, *The Evolution of Cooperation* (Basic Books, 1984); and *The Complexity of Cooperation: Agent-Based Models of Competition and Collaboration* (Princeton University Press, 1997). On the applicability and limitations of the evolutionary analogy see Herbert Kaufman, *Time, Change, and Organizations: Natural Selection in a Perilous Environment* (Chatham House 1985). Kaufman argues that despite the deliberate machinations of organizations, much of success or failure can be attributed to chance actions and circumstances (the evolutionary mutation).

¹²⁹ On Mitchell see Rosen, *Winning the Next War* (op cit) who argues against the "maverick" approach to innovation; on Boyd see Robert Coram, *Boyd: The Fighter Pilot Who Changed the Art of War* (Little, Brown and Company, 2002) and Grant T. Hammond, *The Mind of War: John Boyd and American Security* (Smithsonian Books, 2001) which illustrate how mavericks can influence change.

definition equate learning with policy change¹³⁰. Yet it is analytically useful to disentangle learning, which refers to change in beliefs or the change in confidence in ones beliefs, or the drawing of conclusions from events, from organizational policy change¹³¹. In addition to a level of analysis shift from the individual to the organization, policy change may be inhibited or affected by things other than learning, and conversely changes in beliefs can result in no change of policy.

Policy change is measurable in a number of interesting cases¹³². Military policy change in particular is central to international relations, as the effective generation, projection, and use of power is seen as a key driver for various international behaviors, and doctrine and technological adoption are often identified as components of military power that can overly raw material calculations of power¹³³. While it is possible to draw abstractions of power that

¹³⁰ Haas talks about learning when “behavior changes as actors question original implicit theories underlying programs and examine their original values,” and goes on to assert that new solutions “are constructed because new ends are devised...” Ernst B. Haas, *When Knowledge is Power: Three Models of Change in International Organizations* (University of California Press, 1990) page 3.

¹³¹ Jack S. Levy, “Learning and Foreign Policy” (*op cit*).

¹³² See, for example, Dan Reiter, *Crucible of Beliefs: Learning, Alliances, and World Wars* (Cornell University Press, 1996). Reiter examined learning by looking at alignment choices made by small powers after wars. However his empirical tests and case studies focus on learning as an alternative to realism, with its strict predictions on balancing, hiding, and bandwagoning, for explaining choices; rather than on comparative models of learning. In his brief case studies examining “lessons not learned” he alludes to domestic structures as potential intervening variables on learning, but leaves that as a direction for future research.

¹³³ John Rothgeb, *Defining Power: Influence and Force in the Contemporary International System* (St. Martin’s Press, 1993). Note that power is a central concern for realist, liberal, and Marxist approaches to international relations. On the importance of doctrine in the effective use of force see Steven Biddle, *Military Power: Explaining Victory and Defeat in Modern Battle* (Princeton University Press, 2004), Jonathan Shimshoni, “Technology, Military Advantage, and World War I: A Case for Military Entrepreneurship,” in Brown, Michael E., Owen Coté, Sean M. Lynn-Jones, and Steven Miller (eds) *Offense Defense and War: An International Security Reader* (MIT Press 2004) and Alan C. Stam, *Win, Lose, or Draw: Domestic Politics and the Crucible of War* (University of Michigan Press, 1996)

don't deal with the details of military force posture, most international relations theory posits that changes in force posture, broadly, can diminish or enhance power, at least marginally¹³⁴.

The specific investigations of the Russo-Japanese War case, which have been mostly done by historians, have suffered from the same weakness; under specification, a lack of theoretical rigor, a confusion between learning and innovation, and a lack of competitive testing of alternative explanations. One of the most current histories of the Russo-Japanese war notes that:

It is hard to identify any lesson of the war that was not appreciated or documented at the time. Inevitably, many of these lessons were contradictory, peculiar to the theatre [sic], and more or less appropriate to different military cultures. Moreover, observers viewed those lessons through the distorting lenses of political intrigue, social attitude, military orthodoxy, and wishful thinking¹³⁵

This single paragraph alludes to rationality (lessons appreciated and documented), military culture, cognitive heuristics (social attitude), rational bureaucratic politics (political intrigue), cognitive bureaucratic politics (military orthodoxy), and motivated bias (wishful thinking).

¹³⁴ The degree to which skill and technology can influence the generation of military power is still a matter of debate. It is tempting to treat skill as subsumed within models of power, while technology differentials are exogenous. However military skill, as well as active or passive doctrines, have been brought forward as important modifiers to military power. See Stephen D. Biddle, *Military Power* (op cit); "Victory Misunderstood: What the Gulf War Tells Us about Conflict in the Future," *International Security* 21:2 (Fall 1996) pages 139-179; "The Gulf War Debate Redux: Why Skill and [sic] Technology Are the Right Answer," *International Security* 22:2 (Fall 1997) pages 163-174; Mearsheimer, *Conventional Deterrence* (op cit); Jack Snyder, *Myths of Empire: Domestic Politics and International Ambition* (Cornell University Press, 1993); *Ideology of the Offensive* (op cit); and Stephen W. Van Evera, *Causes of War: Power and the Roots of Conflict* (Cornell University Press, 1999).

¹³⁵ Jonathan B. A. Bailey, "Military History and the Pathology of Lessons Learned: the Russo-Japanese War, a Case Study," in Williamson Murray and Richard Hart Sinnreich (editors) *The Past as Prologue: The Importance of History to the Military Profession* (Cambridge University Press, 2006) page 170.

These theories cannot all be equally persuasive explanations of observed learning behavior, nor can they be equally powerful predictive approaches¹³⁶!

To be fair, the Russo-Japanese narrative has been carried out by historians, and historians have different ways for measuring the accumulation of knowledge and different epistemological objectives from their research¹³⁷. The expanding narrative on the Russo-Japanese War is useful on its own terms, and it may help inform the innovation debate within political science. However it has not been structured to inform the “learning” debate, which itself is still largely disconnected from the much larger questions of military innovation.

No one has sought to systematically test the predictions of competing theories of learning to see which one best explains learning from the Russo-Japanese War, nor have they formulated tests where the different theories generate different predicted behaviors. This dissertation addresses this issue in the much larger debate about the circumstances and causes of military innovation, and it also adds to the narrative concerning this specific historical event.

¹³⁶ Bailey’s approach is not unique. The other, as yet unpublished, document on this topic is Major James D. Sisemore, *The Russo-Japanese War, Lessons Not Learned* (Masters Thesis, US Army Command and General Staff College, 2003) noted that there were many examples of things that would foreshadow the conduct of battle in the First World War, but they were inconsistently applied owing to the diverse cultures, politics, interpretations, and constraints on the various militaries.

¹³⁷ See Jack S. Levy, “Too Important to Leave to the Other,” *International Security* 22:1 (Summer 1997), pages 22-33; John Lewis Gaddis, “History, Theory, and Common Ground,” *International Security* 22:1 (Summer 1997) pages 75-85. The most detailed political science treatment of the Russo-Japanese War case is done within Jack Snyder, *Ideology of the Offensive (op cit)*, pages 77-81 and 132-138.

The Way Forward

This dissertation fills these gaps at the intersection of vicariously learning from events, applications to international security, and the relative effectiveness of Bayesian, bureaucratic, cognitive, and ideational approaches¹³⁸. I will show that the ideational approach outperforms the other approaches in explaining how military theorists and leaders drew lessons about a number of critical questions concerning naval and military tactics and armament. In particular, the bureaucratic interest based approach is exceptionally weak when applied to this case, failing all but the most basic tests. The Bayesian and cognitive approaches perform better, but still leave important aspects of the case unresolved. The ideational model explains all that the two moderately successful models explain, and in addition explains a large portion of the remaining observations.

The remainder of this dissertation is organized as follows. In Chapter Two I will introduce and more fully specify the specific military and naval indicators that I will use to test the predictive power of the four contesting research programs. In Chapter Three I will examine the performance of the Bayesian approach. This chapter also contains, in passing, a discussion of the major events of the Russo-Japanese War and the scoring of most of the empirical data along the naval and military tactical and armament factors. Chapter Four tests the bureaucratic interest based approach, drawing on much of the data already explored in Chapter Three. Chapter Five follows the same organization, this time testing the purely cognitive approach. Chapter Six uses this by now familiar organization to test the ideational approach. Chapter Seven concludes with a summary of findings and a discussion of their

importance within the larger context of the political science literature, and an exploration of some of the implications of the findings for further research.

¹³⁸ More modestly, the dissertation makes a unique contribution to the scholarly understanding of the specific case of the Russo-Japanese War.

Chapter 2 Research Design

In the previous chapter I derived a set of general predictions from four major research programs about learning. To test the comparative explanatory power of these different research programs I will reach back to the Russo-Japanese War of 1904-1905. In this section I will introduce the specific naval and military factors that will guide my testing of the hypotheses. To do this will require some explanation of tactical and strategic debates that were taking place in the early twentieth century between various experts in military policy. These debates, concerning capital ship design, naval tactics, artillery tactics, cavalry tactics, infantry tactics, and the interplay between ground and naval components in maritime warfare all have implications for force planning, and were investigated by observers and commentators during and after the Russo-Japanese War.

The Russo-Japanese War as a Learning Experience

The Russo-Japanese War included a major land component that encompassed a diverse set of tactical actions such as the siege of fortifications, attempted breakthroughs, meeting engagements, river crossings, amphibious landings, and pursuit. The war also included the employment, on both sides¹³⁹, of several new technologies such as the machine gun, trenches, advanced artillery, mortars, grenades, telegraphy, railroads, and barbed wire. The battle fields covered the largest geographic areas yet seen, and casualties in the largest battles exceeded 100,000. The Russo-Japanese War at sea saw two fleets that included some of the most advanced pre-*Dreadnought* battleships, mine warfare, and naval bombardment of land

¹³⁹ Previous wars saw some of these technologies and tactics employed, but never by both sides. To fully explore military views on the effects of new technologies and tactics it is important that both sides had access to the technologies.

fortifications in support of amphibious assault operations. Indeed, the level of technological sophistication and scale of war was so intense that a group of modern scholars entitled a centenary retrospective “World War Zero”¹⁴⁰. Importantly, the war also attracted the formal attention of all of the European Great Powers and the US military, and was recognized at the time as a significant event with the potential for vicarious Great Power learning.

The Russo-Japanese War itself was nineteen months of hostilities between the Japanese ultimatum to and sneak attack on the Russians in February 1904 to the Treaty of Portsmouth, New Hampshire in September 1905. The critical dates and battles are shown in the chart below, and more detail is provided in the appendix.

¹⁴⁰ John W. Steinberg, Bruce Menning, David Schimmelpenninck Van Der Oye, David Wolff, and Shunji Yokote. *The Russo Japanese War in Perspective: World War Zero* (Brill, 2005)

	Dates	Land Operations	Naval Operations
1904	4 February	Japan severs relations with Russia	
	8-9 February		Japanese attack Port Arthur and Chemulpo (Inchon) Fleets
	10 February	Japan declares war	
	12 February	Japanese Chemulpo (Inchon) landing	
	24 February		Naval blockade of Port Arthur begins
	13 April		<i>Petropavlovsk</i> sunk
	25 April	Battle of Yalu River	
	2 May		
	5 May	Japanese Laiotung landing	
	16 May		<i>Hatsuse, Yashima, Yoshino</i> sunk
	25-26 May	Battle of Nan-shan	
	26 May	Siege of Port Arthur begins	
	14-15 June	Battle of Wa-fang-gou	
	15 June		Yessen's Raid
	10 August		Battle of the Yellow Sea
	14 August		Battle of Ulsan
1905	26 August-3 September	Battle of Liao-yang	
	11-17 October	Battle of Sha Ho	
	2 January	Port Arthur Surrenders	
	22 January	'Bloody Sunday' rebellion in Russia	
	11-12 January	Mishchenko's Raid	
	25-29 January	Battle of San-de-pu	
	19 February - 10 March	Battle of Mukden	
	28 May		Battle of Tsushima
	8 June	Japanese Sakhalin landing	
	27 June	Rebellion on Battleship <i>Potemkin</i>	
	5 September	Treaty of Portsmouth Signed	

Figure 2-1 : Major Events of the Russo-Japanese War

During the nineteen months of hostility there were several lulls as both sides concentrated military forces in the theatre of operations. The land and naval operations broke down neatly into a few distinct phases and critical battles. In land warfare in particular there were

pauses between the battles, while a number of naval battles were fought between the opposing fleets. The land portion of the war was essentially concluded with the battle of Mukden in February 1905. At the end of May 1905 the Russian fleet was decisively defeated in the battle of Tsushima. While there was certainly adequate opportunity to see the new technologies in action, the war was brief enough to allow historians to cover the whole sweep of affairs and identify and focus on the critical junctures of land and naval warfare.

During the war a number of militaries attached official observers to the armies, navies, and headquarters of the belligerents¹⁴¹. These observers were charged with keeping a narrative history of events to bring back to their host military organizations¹⁴². In some cases the charge was very specific. For example, the US War Department specifically asked their observers to see how use of the machinegun influenced front line demand for ammunition and changed field logistics¹⁴³. Depending on the security protocols of the various units and observers these consisted of long diaries and/or short notes sent back during the conflict. Some observers also published independent book length or article studies of the war to

¹⁴¹ In addition to the French, German, British, and American observers studied here there were also reports collected by observers from Argentina, Austria Hungary, Bulgaria, Chile, Denmark, Italy, Norway, Rumania, Spain, Sweden, and Switzerland. See John Thomas Greenwood, *The American Military Observers of the Russo-Japanese War 1904-1905*, (PhD Thesis, Department of History, Kansas State University 1971), p110. Of these, only Italy and Austria-Hungary could be considered major military powers, and Austria-Hungary didn't survive the First World War. The Italian mission consisted of two Army officers, one each attached to the headquarters of each belligerent. The Italian government did not produce an official study of the war, nor did they publish reports for external audiences. The Austro-Hungarians began to produce an official history, but the outbreak of the First World War and dismemberment of the empire intervened to prevent completion.

¹⁴² Observer reports play an important role in bringing information back to home militaries. See David M. Glantz, "Observing the Soviets: U.S. Army Attaches in Eastern Europe During the 1930s," *Journal of Military History* 55:2 (April 1991).

¹⁴³ David A. Armstrong, *Bullets and Bureaucrats: The Machine Gun and the United States Army, 1861-1916* (Greenwood Press, 1982)

complement their official reports. Additionally, civilian observers with a military background were chartered by the media to report on the war¹⁴⁴, and the Russo-Japanese War provided the first occurrence of a reporter filing his dispatch on a conflict by wireless¹⁴⁵.

The home militaries compiled the reports of observers into official accounts. These official histories included the observer reports, but military official historians also had access to some of the reports of other observers, accounts from the popular press, and some war records from the belligerents. The official histories were written prior to, and in some cases, after the First World War and published widely¹⁴⁶. Of course the public publications of reports and histories were redacted to some extent, but often the redactions were mostly names, backgrounds, and assignments of officers from the home militaries and diplomatic traffic between the belligerents and the host militaries. I also make use of declassified sources where available.

Following the publication of reports and histories a literature grew up in official military journals to discuss the lessons of the war for modern tactics, operations, and strategy. This literature came to an abrupt halt in August 1914. Following the end of the First World War

¹⁴⁴ Among the civilian correspondents was a young Jack London. I will not use the first hand reports of civilians, except where cited in the professional military literature.

¹⁴⁵ Peter Slatter, *Reporting the Russo-Japanese War, 1904-5: Lionel James's [sic] First Wireless Transmissions to the Times* (Global Oriental Ltd, 2004)

¹⁴⁶ The US official histories were published by the forerunner to the Government Printing Office, while the British histories were published by His Majesty's Stationary Office (HMSO). The German history was published in an authorized English translation, done by a member of the German General Staff, by a private British publisher that specialized in military affairs. The French official narrative of events was also published in English after a French army officer translated the account for a private publisher. While there were details that were held back in classified sections and versions, all of the Great Power observers made large amounts of their data available even prior to the First World War.

most military writing pertained to the first hand lessons to be drawn from that bloody conflict. Discussion of the Russo-Japanese War, when it happened at all, was mostly done in passing footnotes to articles about the First World War. Also, in the aftermath of the First World War, the historical section of the Britain Army completed its official history, and the US Army used cases drawn from the Russo-Japanese War in their Staff College program at Fort Leavenworth Kansas¹⁴⁷.

The official record on the Russo-Japanese War is therefore neatly bounded by time, and in fact it is possible to gather just about all of the relevant documents required for this study¹⁴⁸. There were a series of reports done during and immediately after the war. These reports were processed into official histories compiled prior to, and immediately after, the First World War. In the professional journals of the various militaries there was active speculation about the “lessons” of the Russo-Japanese War prior to the First World War, and there was a much smaller official literature that persisted during the 1920s that complemented some of the staff college work.

These data provide some unique leverage on the subject of learning. We have detailed observer reports from all of the Great Power militaries in both their original language and

¹⁴⁷ Two observers from the US Army during the Russo-Japanese War later served as commanders of the Staff College, explaining the popularity of the war as a study and problem topic.

¹⁴⁸ Conversely, larger events, such as the outbreak of the First World War, could generate a library’s worth of relevant documents. By focusing on the observers and following the professional paper trail through the 1930s I have limited this dissertation to a finite, and somewhat manageable universe of data, and have attempted to use the universe of primary sources.

approved official English language translations¹⁴⁹. In some cases I have been able to obtain the original full text classified versions of observer reports to compare with the published reports¹⁵⁰. The observer reports themselves are marked with the author and branch of service of the observer, allowing us to compare the views of cavalry officers with artillerymen. We also have a vibrant military historiography from professional journals and publications prior to the First World War. After the experience of the First World War we have a second literature that examines the same events, with the same primary source documents, for the same audience, with the same purpose, but after a massive technological and doctrinal shock to the Great Power militaries.

All of these factors allow us to make a multitude of crosswise comparisons between and among observers from different countries, different branches of the military, different times of observations, different vantage points, and before and after the First World War. All of the first hand observers experienced the same series of events and were military experts that were charged with documenting the experiences of the war and bringing those observations back to their home militaries. The second hand literature in the professional journals all had the same set of observer reports available.

¹⁴⁹ This is important. There is the possibility that if a translation is done from a foreign language into English by a member of the British or American military some of the translators bias may creep into the English, rendering the nuances of the translation suspect. Because the French and German reports were translated by members of the French and German historical sections, i.e., the same sections that compiled the foreign language official histories, the probability of a bias from the translator being different from the bias of the original foreign language document is somewhat reduced. The chief German translator, Karl von Donat of the Historical Section of the German General Staff, also supervised the translation of other German language publications, including tactical manuals and histories, into English during the early 1900s.

¹⁵⁰ *The Russo Japanese War: Reports from Officers Attached to the Japanese Forces in the Field Volume 1*, General Staff of the War Office (April 1905), copy 27 out of 142, Secretary of War, marked **Confidential**. Copy available at Widener Library, Harvard University, Cambridge MA.

In all cases being an actual observer was a prestigious high profile assignment handed to high potential officers¹⁵¹. The observers themselves went on to great things, and so their stint within this mission can be considered successful, both by their own standards and the views of those responsible for controlling progress and promotion within their respective militaries. Among the British observers was then Lieutenant-General Sir Ian Hamilton, later to command Allied forces at Gallipoli; Major (later General Sir) James Aylmer Haldane, cousin to Lord Haldane, Minister of War 1905-1912 and friend to Winston Churchill¹⁵²; Captain (later Admiral Sir) Ernest Troughbridge who was to rise to second in command of the Mediterranean fleet during the outbreak of World War One¹⁵³, Captain (later Vice Admiral Sir) William Pakenham, who would command the Battle Cruiser Squadron after Jutland and later command the Royal Navy College¹⁵⁴; and Lieutenant-General (later Field Marshall) Sir William Nicholson, who would become Chief of the Imperial General Staff

¹⁵¹ While most observers were of the Captain and Major ranks, the UK sent three generals among their twenty three observers (including one Canadian and one Australian officer), the French sent one general with their seven observers, the US sent two generals among their twenty three observers, and the Germans sent a Prince of the House of Hohenzollern (the German Royal Family) with their nine observers.

¹⁵² Aylmer Haldane and Churchill were both prisoners during the Boer War together. Haldane would later serve as military general commanding Mesopotamia after the First World War. General Sir James Aylmer Haldane, *How We Escaped from Pretoria* (William Blackwood & Sons, 1900), and *A Soldier's Story: The Autobiography of General Sir Aylmer Haldane* (William Blackwood & Sons, 1948)

¹⁵³ Troughbridge commanded the fleet sent to intercept the German ships Goeben and Breslau upon the outbreak of war. Interpreting his orders to not engage a stronger enemy as allowing disengagement with the Germans, the pursuit was not as vigorous as it would otherwise have been. The German ships escaped to Turkey, where they were instrumental in eventually bringing Turkey into the War on behalf of the Central Powers. See Dan Van der Vat, *The Ship that Changed the World: The Escape of the Goeben to the Dardanelles in 1914*, (Hodder and Stoughton Publishing 1985)

¹⁵⁴ See Keith Yates, *Flawed Victory: Jutland 1916* (United States Naval Institute Press 2000), and Geoffrey Bennett, *The Battle of Jutland* (BT Batsford Ltd, 1964) for Pakenham's actions at Jutland and William Scott Chalmers, *The Life and Letters of David, Earl Beatty*, (Hodder & Stoughton, 1951) for Pakenham's career under Beatty following Beatty's replacement of Jellicoe in 1917.

under Haldane's cousin, Sir Richard Burton Haldane, from 1908-1912¹⁵⁵. While not observers, the officers charged with producing an official history for Great Britain based on the observer reports and public data were Captain Archibald Wavell, Major Guy Dawnay, and Sir Ernest Swinton¹⁵⁶. It is reported that the King of England himself read the naval dispatches from Jackson, Troughbridge, and Packenham¹⁵⁷.

Among the German observers was Captain (later Generalmajor) Maximilian Hoffmann. Hoffmann would become a staff officer during the First World War and planned German operations at the Masurian Lakes and Tannenberg¹⁵⁸. Following Tannenberg Hoffman was promoted, and later wielded effective command of the combined German, Austrian, and Bulgarian armies on the Eastern Front, and was ranking officer in the negotiation and

¹⁵⁵ Nicholson, along with Richard Burton Haldane were to be major players in setting British strategy, doctrine, tactics, and procurement prior to the First World War. See Martin Samuels, *Command or Control? Command, Training, and Tactics in the British and German Armies: 1888-1918* (Frank Cass, 1995).

¹⁵⁶ Captain Wavell, later Field Marshall Sir Archibald Wavell, the First Earl of Wavell, would go on to command Allied forces in World War Two in the Mediterranean and South East Asia. During the First World War he served as a combat officer in Ypres, then later as an aid to the Russians in the Middle East, and finished up the war with Sir Edmund Allenby's forces in Iraq and Palestine. He later became Viceroy of India. Dawnay accompanied Ian Hamilton to Gallipoli as a Colonel, and was later promoted to General, finishing the First World War as Deputy Chief of Staff to the General Headquarters. Samuels (op cit) p 122. Swinton, as noted was already something of a character. He wrote *The Defense of Duffer's Drift* (op cit) under the pseudonym "Backsight Forethought", in which he expounded a tactical system for dealing with Boer commandos through a series of dreams relayed to the reader. After writing the Russo-Japanese War histories, he would serve in World War One as the official correspondent, writing under the pseudonym "Eyewitness". His reports went directly to Field Marshall Lord Kitchener. It was in this capacity that he, in 1914, became instrumental in conceptualizing what became the tank. J. P. Harris, "The Rise of Armour," in, Paddy Griffith (editor) *British Fighting Methods in the Great War* (Frank Cass, 1996). On all three see Jay Luvaas, "The First British Official Historians," *Military Affairs* 26 (Summer 1962) pages 53-54

¹⁵⁷ Philip Towle, "The Evaluation of the Experience of the Russo-Japanese War," in Bryan Ranft, (editor), *Technical Change and British Naval Policy, 1860-1939* (Hodder and Stoughton, 1977) page 67.

¹⁵⁸ Tannenberg was the most spectacular single battle during the First World War, and resulted in the complete collapse of two Russian Armies and the Russian offense into East Prussia. Dennis Showalter, *Tannenberg 1914: Clash of Empires* (Potomac Books, 2004).

signing of the Treaty of Brest-Litovsk, which took Russia out of the First World War¹⁵⁹. Also present was Captain (later Generalleutnant) Günther von Etzel, who would command a Cavalry Brigade during the “race to the sea” and then become commander of the German XVIII and XVII Corps on the Western Front during the First World War, and who would also receive the *Pour le Mérite*, Germany’s highest military honor.

Even in such august company the American mission must stand out. It included some of the most luminous names in American military history¹⁶⁰. It was headed by General Arthur MacArthur, who was then in the twilight of his career¹⁶¹. It also included Captain (later General of the Armies) John Pershing, who commanded US forces in Europe during the First World War, and would later serve as Army Chief of Staff. Captain (later General) Peyton C. Marsh, who would rise to command Army artillery during the War and would become Army Chief of Staff¹⁶². Also among American observers were Major (later Major General) Joseph Kuhn, later president of the Army War College; Major (later Major General) Montgomery Macomb, also president of the Army War College; Captain (later Major General) John Morrison later Commandant Army Command and General Staff College at

¹⁵⁹ Hoffmann was technically subordinate to Prince Leopold of Bavaria, but Leopold exerted no operational control over the combined armies.

¹⁶⁰ See Alfred Vagts, *The Military Attaché* (Princeton University Press, 1967) who commented that the observers sent by the Great Powers to the Russo-Japanese War were “the intellectually most impressive group of such observers ever assembled”.

¹⁶¹ Traveling with Arthur as far as Tokyo, though not deploying to Manchuria, was his aid and son, Douglas MacArthur. He too went on to a notable military career.

¹⁶² Mark E. Grotelueschen, *Doctrine Under Trial: American Artillery Employment in World War I* (Greenwood Press, 2001).

Fort Leavenworth¹⁶³, and Brigadier (later Major) General Thomas Barry, Superintendent of the US Military Academy at West Point¹⁶⁴.

Thus not only was there an incentive for the observer missions to draw lessons from the war, the personnel who staffed these billets were later placed in positions where they could implement and propagate their lessons learned. One British observer, and the cousin of another, would draft British Army doctrine a few years after returning from Manchuria, while a third observer would run the higher education institutions of the Royal Navy. Multiple American observers would run the educational institutions that would train a generation of United States Army officers. The German, French, British, and American observers would all command at various levels with various distinctions during the First World War. All observers were well placed to bring their lessons back, all had the background to explore critical issues of doctrine and technology, and all were identified as high potential officers placed on a high priority project.

Previous studies of the Russo-Japanese War concentrated on how the observers drew the “wrong” lessons from the war, citing especially the difference between expectations and reality of land warfare in 1914¹⁶⁵. While it is evident from the historical record that the expectations of the Great Power militaries in July 1914 were largely divergent from the actual course of hostilities over the next four years, it is not at all clear that the principles of warfare

¹⁶³ At the Staff College Morrison would serve as a mentor to George C. Marshall, causing Marshall to remark “he taught me all I had even known of tactics,” Larry I. Bland, “George C. Marshall and the Education of Army Leaders,” *Military Review* 68 (October 1988) pages 27-37.

¹⁶⁴ Greenwood, *American Military Observers*, (op cit) p 114-115.

¹⁶⁵ Snyder, *Ideology of the Offensive* (op cit).

were all that unambiguously self-evident in 1908, nor is it more than assertion that lessons of 1908 were misapplied¹⁶⁶. Hindsight always provides the ability to revisit ambiguous data and draw clear conclusions, even when the historical data in question have been randomly generated¹⁶⁷! This dissertation will systematically and rigorously explore alternative hypotheses about learning using the wealth of data surrounding the Russo-Japanese War.

It is difficult, even after one hundred years, to identify the “correct” lessons of a series of events as complex as the battle tactics of the Russo-Japanese War¹⁶⁸. Thus I do not seek to compare lessons identified by the observers and official historians to a “correct” standard. Instead I make theory driven predictions about the patterns of lessons drawn, and then examine the actual patterns of observation provided by the data to see which theory best predicted the observed patterns.

By and large the hypotheses generated in this dissertation focus on the degree of *congruence and variance* between different observations and the changes of observations over time, not on the actual values of the observations *per se*. Chiam Kaufmann argued persuasively that analytically useful learning hypotheses predict this convergence and divergence among

¹⁶⁶ On the difficulty of drawing unambiguous lessons from complex activities see Dominic D. P. Johnson and Dominic Tierney, *Failing to Win: Perceptions of Victory and Defeat in International Politics* (Harvard University Press, 2006)

¹⁶⁷ Nassim Nicholas Taleb, *Fooled By Randomness: The Hidden Role of Chance in the Markets and Life* (Random House 2001).

¹⁶⁸ Recent research suggests that even seemingly obvious questions of interpretation, such as identifying winners and losers, is problematic. Johnson and Tierney, *Failing to Win* (op cit). Johnson and Tierney’s argument is that individuals with vested interests or political agenda can manipulate the criteria against which outcomes are measured. By engaging in this “match fixing” the whole process of learning is subverted by preëxisting interests.

groups faced with similar (or better still, identical) data inputs¹⁶⁹. Judging historical beliefs against a current belief that is held to be “objective fact” is inherently problematic¹⁷⁰. Indeed, Jervis argues that even if it were possible, “often it would be more fruitful to ask why people differed and how they came to see the world as they did”¹⁷¹.

The hypotheses of convergence, divergence, reinforcement, and changes in beliefs derived in the previous chapter guide the inquiry of this dissertation. However, as they are currently formulated, they lack the specificity to be truly tested against empirical data. This chapter provides the bridge between the general theories and the specific data.

Offensive Advantage 1871-1914: Causality Without Data

The rapid and unprecedented industrialization that took place in the late 19th and early 20th Centuries was bound to have some effect on warfare. Between the conclusion of the Franco Prussian War in 1871 and the eventual outbreak of general war in 1914 there were tremendous advances in the rates of fire, accuracy, and range of artillery and rifles; there was the buildup of an extensive network of railroads and telegraphy, there were advances in

¹⁶⁹ Kaufmann (op cit), p 562

¹⁷⁰ Haas makes a similar point about learning theories that are contingent upon whether a “correct” lesson is learned, as determining whether a lesson is correct is inherently problematic. Ernst B. Haas, *When Knowledge is Power: Three Models of Change in International Organizations* (University of California Press, 1990) page 26. Levy holds that for “misperception” to occur there must be a knowable and identifiable correct perception. When it is left to the current analyst to define the terms of that ostensibly objective “correct perception” we risk introducing substantial bias into our research design. See Jack S. Levy, “Misperception and the Causes of War,” *World Politics* 36:1 (October 1983) pp 76-99

¹⁷¹ Robert Jervis, *Perception and Misperception in International Politics* (Princeton University Press, 1976) page 29.

metallurgy, chemistry, and explosives, and there was the development of new weapons such as the man portable machine gun, the fuzed grenade, smokeless powder, and gas¹⁷². These developments were supported by a burgeoning arms development and production industry including such notable names as Vickers, Krupp, Mauser, Hotchkiss, and Bethlehem Steel¹⁷³. In addition the expansion of mass military service, especially among the Continental powers, provided access to unprecedented reserves of trained manpower. The rise of telegraphs and wireless telegraphy added improved command and control which allowed armies of greater size to be coordinated by a central command¹⁷⁴.

Military theorists, however, were divided as to what the effects of all of this technology actually would mean for warfare. This uncertainty was exacerbated by the lack of first hand knowledge about modern war among peers. There was a broad feeling that advances would favor those that took a tactical, operational, and strategic offense, but the exact causal links between technology, offense, and outcomes were mostly unspecified and completely

¹⁷² David A. Armstrong, *Bullets and Bureaucrats: The Machine Gun and the United States Army, 1861-1916* (Greenwood Press, 1982) ; Gaddis Smith, *Britain's Clandestine Submarines: 1914-1915* (Yale University Press, 1965)

¹⁷³ Despite Bethlehem's roots in steel, the company had diversified into armaments including naval shipbuilding and munitions. See Mark Reutter, *Making Steel: Sparrows Point and the Rise and Ruin of American Industrial Might* (Summit Books, 1988); Benjamin Franklin Cooling, *Gray Steel and Blue Water Navy: The Formative Years of America's Military Industrial Complex 1881-1917* (Archon Books, 1979). Bethlehem Steel spun off its last military business "BethShip" in 1997 to Veritas Capital. Restructured as Baltimore Marine Industries the yard unsuccessfully pursued military repair work and was liquidated. A listing of Bethlehem's naval shipbuilding activities can be found here: <http://www.coltoncompany.com/shipbldg/ussbldrs/postwwii/shipyards/inactive/atlantic/bethsparrowspoint.htm>

¹⁷⁴ The importance of centralized command and control and telegraphy for European War was established in the Battle of Koniggratz (Sadowa) fought as part of the Austro-Prussian war in 1866. There Prussian General Moltke (the elder) was able to concentrate disparate armies against the major Austrian force and win the decisive battle of the war. Daniel J. Hughes, *Moltke on the Art of War* (Presidio Press 1993).

untested. Indeed, prior to the First World War, Europe underwent such a prolonged period of peace following the 1870-71 Franco-Prussian War that British MP and public intellectual Norman Angell wrote that warfare between industrialized societies was a thing of the past¹⁷⁵. The wars that the European powers waged during the period were colonial wars, which all observers and participants recognized were very different from modern warfare among industrial powers. In colonial war the industrialized power had to deal with the projection of military power across vast distances, which certainly posed unique constraints. However the colonial opponents were often disorganized and armed with obsolete weapons¹⁷⁶. They lacked the modern tactical system which had been evolving among European armies.¹⁷⁷ The high degree of tactical and technological asymmetry meant that colonial warfare was an imperfect, and perhaps even misleading, indicator for the effects of industrialization on land warfare.

That land warfare was going to continue to be a concern for European powers was not in doubt. For despite Angell's optimism, the European climate was fraught with growing

¹⁷⁵ Norman Angell, *The Great Illusion* (G.D. Putnam & Sons / Knickerbocker Press, 1913)

¹⁷⁶ The most complex was the Anglo-Boer War between the English and ethnic Dutch colonialists in South Africa. But most wars pitted preindustrial or industrializing tribes or proto states against modern European armies or against one another. Bryon Farwell, *Queen Victoria's Little Wars* (Harper & Row, 1972). While these wars all illustrated some implications of industrialization, none was analogous to symmetrical industrialized warfare. The Anglo-Boer War, for example, which included two relatively sophisticated militaries, was fought in the wide open veldts of South Africa. The Boer were primarily farmers with irregular military experience gained from recurring conflicts with native Bantu and Zulu tribes. There was no Boer military industry to speak of, and troops were armed with older rifles which they owned or through some modern Mauser rifles which Boer leaders managed to import before the British imposed a blockade.

¹⁷⁷ See Bryon Farwell, *Queen Victoria's Little Wars* (Harper & Row, 1972).

tension¹⁷⁸. By the turn of the century the European Great Powers were competing for global influence, engaging in a naval and military arms races, and locked into an intricate system of diplomatic alliances¹⁷⁹. This tension was manifest in a series of diplomatic crises. Indeed, prior to WWI and after the Russo-Japanese war there were four major European crises which threatened to provoke a general European war¹⁸⁰. While these crises did not turn into general war, they demonstrated, and amplified, important policy differences between the Great Powers and focused the mind of civilian and military planners on the problems of general war.

Russia and Japan, despite being on the fringes of the Great Powers, did present some striking similarities to the European situation. Japan was an island power, like Great Britain, and would be required to use its small Army carefully in fighting on the Asian continent. The Japanese army had been trained by German military advisors, and used tactical manuals translated directly from German. The Russian Army was influenced by the French Army, especially in matters pertaining to artillery specifications and tactics¹⁸¹. The Japanese Navy was actually built by British shipbuilders, notably Armstrong and Vickers, and Japanese ship

¹⁷⁸ There is a rich literature on the escalation of animosity among the Great Powers prior to WWI. Among many others see Joachim Remak, *The Origins of World War I 1871-1914* (Holt, Rhinehart, and Winston, 1967).

¹⁷⁹ Paul Kennedy, *The Rise and Fall of the Great Powers* (1989), discusses the differential rates of growth that underpinned German dissatisfaction with the existing international order. One the role of the naval and ground arms races themselves in the European tensions see David G. Herrmann, *The Arming of Europe and the Making of the First World War* (Princeton University Press 1996).

¹⁸⁰ These were the first and second Moroccan Crises, the Bosnian Crisis, and the Balkan Wars

¹⁸¹ It was also widely recognized by contemporary observers that Russia, due to the ethnic mixture of its regular army (including Finns, Poles, Cossacks, central Asians, Ukrainians, and Russians), quasi-feudal officer corps, and low level of training was not on par with other Continental powers.

design was similar to British design¹⁸². The Russian Navy, in contrast, was heavily influenced by French and Italian design and theories¹⁸³. The similarities between the belligerents and the observers were noted at the time.

Thus European militaries before and after the Russo-Japanese War were in a position where rational learning could be expected to take place. The stakes, a general Great Power war in Europe, were very high; available first hand and vicarious data were limited and stale; and the critical issues and questions pertaining to offensive advantage, though not the specific causal relationships and conclusions, were identified. The Russo-Japanese War presented a laboratory where the conjectures pertaining to the impact of technology and doctrine could be tested, validated, or discarded.

Critical Naval and Military Factors

This section will examine a number of the specific debates surrounding strategy, technology, tactics, and intangible factors which contribute to the propensity for offensive and defensive success. All of the military factors are components of the modern tactical system, while the naval factors are somewhat separate¹⁸⁴. The balance of the dissertation will examine how

¹⁸² Fred T. Jane, *The Imperial Japanese Navy* (W. Thacker & Co, 1904), “Erin” [sic] “The Japanese Navy,” in Thomas Allnutt Brassey (editor) *The Naval Annual, 1904* (J. Griffin & Co., 1904) pages 187-206.

¹⁸³ Fred T. Jane, *Fighting Ships 1905-1906* (Sampson Low Marston, 1905; ARCO Reprint, 1970), Thomas Allnutt Brassey (editor) *The Naval Annual, 1904* (J. Griffin & Co., 1904), pages 209-472, 78 unpaginated plates inclusive. While most Russian ships were built by Russian yards borrowing from French design, the modern battleship *Tsesarevitch*, Vitgeft’s flagship at the battle of the Yellow Sea, was actually built in France.

¹⁸⁴ The preëminent work on the emergence of the modern tactical system is Stephen Biddle’s *Military Power* (op cit).

perceptions of these posited relationships changed over time as actual data were collected during the Russo-Japanese War, and then revisited after WWI. This does not aspire to be a theory of offensive – defensive advantage. Instead I am using perceptions on this issue to judge the explanatory power of different theories of learning.

This discussion will first look at some of the larger strategic issues illustrated during the war, including the utility of surprise, the duration of war, the role of sea power, and the role of offensive spirit. At a lower level I will examine evolving tactics, including the employment of direct and indirect fire, the use of destructive or suppressive fire, infantry attack tactics, the role of cavalry, and the impact of fixed and hastily improved fortifications and entrenchments. Finally, I will examine some specific naval implications, including the role of torpedo boats and the design of capital ships.

By examining land warfare, naval warfare, and the broader strategic environment we can gain important experimental leverage on our hypotheses. Between the turn of the century and the First World War there were a number of unresolved debates for which Bayesian reasoning, rational bureaucratic politics, motivated bias, narrow cognitive, and cultural-cognitive explanations would predict different behaviors by members of the great power militaries.

Strategic and Operational Surprise: Decisive or Merely Useful?

There was, and there remains today, wide agreement that surprise is useful at the strategic and operational levels of war.¹⁸⁵ *Ceteris paribus*, it is better to surprise your opponent than to not. However a more nuanced debate surrounds the issue of whether surprise is sufficient for either operational or strategic level success among roughly symmetrical forces, i.e., whether surprise is decisive or merely advantageous. At both the strategic and operational level this raises two related questions, the first generally is whether surprise is decisive and the second, more specifically, is under what circumstances, if any, can surprise be decisive.

If surprise is felt to be decisive, this can generate destabilizing pressures on international conflict, leading to an increased probability of war. First, surprise may increase the likelihood of a state winning a war. Second, surprise may decrease the costs of a state engaging in a war. Both of these factors make war more likely, and in conjunction the two become doubly destabilizing¹⁸⁶. The two factors combine to generate the perception, and perhaps the reality, of a first mover advantage. If strategic surprise is decisive and the side

¹⁸⁵ There is nearly unanimous agreement that surprise is often sufficient, though not necessary, for tactical success as well, but this is almost trivial. The lack of variation over time makes it an uninteresting proposition over which to test changing beliefs.

¹⁸⁶ Note that this pertains even in formal models. In Bueno de Mesquita's expected utility model the probability estimates of success and failure and the costs of fighting are held constant through the bargaining phase and the combat round. If strategic surprise is decisive, or even highly important, the model requires a layer of refinement. A refined model of the international interaction game would show that the probability of success in combat decline during the iterated bargaining rounds and the costs of fighting increase as well. Such a refinement on the model would lower the thresholds for initiating military force, and *ceteris paribus* predict a greater likelihood of armed conflict arising in any single event, or a greater frequency of armed conflict over all. See Bruce Bueno de Mesquita, and David Lalman, *War and Reason: Domestic and International Imperatives* (Yale University Press, 1992) and Robert B. Powell, "Bargaining and Learning While Fighting," *American Journal of Political Science* 48:2 (April 2004) pages 344-361.

initiating a conflict has an advantage it suggests that crisis diplomacy is counterproductive for the side with offensive war aims. The mere act of engaging in crisis diplomacy alerts the target to the possibility of future military action, and obviates any surprise. Even if diplomacy is used, it may be perfunctory and of insufficient duration to allow both sides to reach a solution¹⁸⁷.

At both the strategic and operational level, if surprise is decisive it can increase the autonomy of the military. It is an old axiom that the probability of maintaining secrecy varies in proportion to the number of people who are in on the secret¹⁸⁸. There will therefore be, *ceteris paribus*, more pressure for restricting, even among civil and military actors, discussion and knowledge about plans predicated on surprise than on other war plans¹⁸⁹. Because the military needs to be aware of plans in order to develop implementation schemes, timetables, and so forth, the burden of restricting distribution and discussion of war plans will tend to fall disproportionately on civil leadership¹⁹⁰. Thus civil leadership may

¹⁸⁷ Richard Ned Lebow, "Windows of Opportunity: Do States Jump Through Them?," *International Security* 9:1 (Summer 1984), reprinted in Stephen E. Miller, *Military Strategy and the Origins of the First World War* (Princeton University Press, 1985) pages 149-186. This article was **not** reprinted in the 1991 revised and expanded version, edited by Miller, Van Evera, and Lynn-Jones. For a more formal treatment see Robert Powell, "Bargaining and Learning While Fighting," *American Journal of Political Science* 48:2 (April 2004) pages 344-361.

¹⁸⁸ Abram N. Shulsky, *Silent Warfare: Understanding the World of Intelligence* (Brassey's, 1993); Lisa Krizan, *Intelligence Essentials for Everyone* (Occasional Paper Six, Joint Military Intelligence College, June 1999); Patrick Radden Keefe, *Chatter: Dispatches from the Secret World of Global Eavesdropping* (Random House, 2005).

¹⁸⁹ John J. Midgley Jr., *Deadly Illusions: Army Policy for the Nuclear Battlefield* (Westview, 1986) notes that the US Army was kept largely in the dark about nuclear doctrine affecting the use of tactical nuclear weapons, leading to a mismatch between the Army's warfighting plan and the actual usage of tactical nuclear weapons.

¹⁹⁰ Paul Hayes, "Britain, Germany, and the Admiralty's Plans for Attacking German Territory, 1906-1916," in Robert O'Neill, (editor) *Strategy and International Politics: Essays in Honour [sic] of Sir Michael Howard* (Oxford University Press, 1992); Nicholas d'Ombrain, "The Imperial General Staff and the

be acting with less information about a country's war plans, or wielding less oversight over ongoing military operations, if surprise is felt to be decisive at either the strategic or operational levels of war. This increases the autonomy of a military *vis-à-vis* civilian leadership, a preference that underpins much political science literature on offense dominance¹⁹¹.

War Duration

Another key area of uncertainty was about the likely duration of war. Many argued that war would be over quickly. Modern transportation would allow for rapid mobilization and operational concentration and closure, and rapid rates of fire would enable flurries of unprecedented destruction to be unleashed upon the enemy, leading to a quick decision in a bloody battle¹⁹².

Again the implications of these divergent views differ in important ways. First, at the strategic and even operational level of war there are implications for infrastructure. If war tends to be quick, or at least the outcomes decided quickly, the importance of manpower reserves, resource access, and the industrial base diminishes. War ends before any of these advantages can be brought into play by either the victor or the vanquished. The emphasis becomes concentrating as much force as is physically possible at the initial decisive point,

Military Policy of a Continental Strategy During the 1911 International Crisis," *Military Affairs* (October 1970) pages 88-93.

¹⁹¹ Barry R. Posen, *Sources of Military Doctrine* (op cit)

¹⁹² Jack Snyder, *Ideology of the Offensive* (op cit)

irrespective of the long term implications¹⁹³. If, however, wars are prolonged then the ability of a belligerent to sustain the war effort becomes paramount¹⁹⁴. A belligerent lacking food or resources will wither from within even if the Army is undefeated in the field. A belligerent without an industrial base or without an adequate logistics net will find their forces disarmed irrespective of the outcome of particular battles. Conversely, a belligerent with advantages in resource access and industrial capacity may be able to continually raise and equip new fighting units even if initial engagements were not successful.

At a narrower tactical and lower operational levels an early victory becomes essential. Given the short duration of war there is no time to recover from early reverses, adjust tactics, or replace battlefield losses. Given a longer duration there would be more time to adjust to the tactics of the enemy and to counter those tactics on the basis of initial encounters. This has second order consequences for force equipment and employment as well.

Offensive Spirit

Perhaps no issue has been more contentious than that of “offensive spirit”, dash, or élan. Certainly most analysts agree that morale, generally, is an important aspect of fighting

¹⁹³ This carries Clausewitz’ principle of “economy of force” into both a time and space dimension. Clausewitz argued that once the expense of training and equipping a force had been met, it was uneconomical to keep these forces away from the decisive action of war. Thus, he does not, as the term would seemingly imply, argue for using the minimum of force, but for using all force available. See Peter Paret and Michael Howard (editors and translators), Clausewitz, *On War* (Princeton University Press 1976) page 213.

¹⁹⁴ Indeed, prior to the First World War, many thought that it would be impossible for a society to sustain a fully mobilized society in the field for more than six months. Shelford Bidwell and Dominick Graham, *Fire Power: British Army Weapons and Theories of War* (George Allen & Unwin 1982). Under such constraints it would be essential to achieve a decisive result quickly, before the logistical burden imposed by full mobilization crushed the resources of the state.

effectiveness¹⁹⁵. Prior to WWI (and in modern political science literature) offensive spirit took on a narrower meaning. Some posited that a motivated attacker could overwhelm a motivated defender under conditions of rough technological symmetry¹⁹⁶. Willpower, rather than firepower, would be the decisive factor.

Advocates explained that offensive spirit was important for two reasons. First, it allowed an attacker to keep units together, while under fire, in order to close with and destroy an enemy¹⁹⁷. Secondly, displays of offensive spirit could, irrespective of the tactical situation, cause a defending unit to suffer a loss of confidence, and to quit the field. As House explains in his criticism of pre-World War One doctrine:

In reaction to the new lethality of the battlefield, many soldiers tended to overemphasize the importance of morale, of the attacker's offensive spirit. The goal of the attack was not so much to destroy the enemy by fire but to break the morale of the opposing commander or of his troops. Some of this emphasis was appropriate, because the attacker needed great confidence and discipline to advance in the face of withering enemy fire. The danger, however, was that commanders might believe that morale was more important than firepower and might insist on discipline at the expense of individual initiative on the battlefield. In the context of nineteenth-century Social Darwinism, the ability to advance despite massive

¹⁹⁵ S. L. A. Marshall, *Men Against Fire: The Problem of Battle Command*, (1947, University of Oklahoma Reprint 2000). Marshall's empirical work has been attacked as fabrication, but even those who attack the quantification agree with his theory and recommendations. See Glenn W. Russell, *Reading Athena's Dance Card: Men Against Fire in Vietnam* (US Naval Institute Press, 2000)

¹⁹⁶ Stephen W. Van Evera "Offense Defense, and the Causes of War,"; and James W. Davis, Bernard Finel, Stacie Goddard, Stephen Van Evera, Charles Glaser, and Chaim Kaufmann, "Correspondence: Taking Offense at Offense-Defense Theory," all in Michael E. Brown, Owen Coté, Sean M. Lynn-Jones, and Steven Miller (editors) *Offense Defense and War: An International Security Reader* (MIT Press 2004)

¹⁹⁷ Even during the Napoleonic wars, and then through the US Civil and Franco-Prussian wars, it was noticed that frontal infantry and cavalry charges involved taking higher casualties. Offensive spirit allowed these units to absorb the casualties without breaking, and then to close with the defender.

casualties was subconsciously considered to be a demonstration of national toughness and superiority¹⁹⁸.

Thus displaying offensive spirit had the effect of countering the enemy's spirit, and winning the battle when faced by superior firepower. In Clausewitzian terms, militaries felt that the spirit was the center of gravity, and it could be struck both by physical defeat and by moral defeat. Working from that premise, they devised a tactical system optimized to defeat the spirit of the enemy's soldiers in the field.

The implications of this debate are weighty indeed. If offensive spirit is, *ceteris paribus*, decisive the doctrine of a military should be aligned towards seizing and maintaining the offensive. Furthermore, because offensive spirit goes beyond discipline and training and involves the national character of a military, elements of Social Darwinism are involved¹⁹⁹.

The Influence of Sea Power Upon Land Warfare

The turn of the century was also an auspicious time for Naval affairs. In 1904 the Mahanian moment was in full swing and Japan and Britain had laid the keels of "all big gun" battleships²⁰⁰. Mahan argued for the concentration of shipbuilding resources into the

¹⁹⁸ Jonathan M. House, *Combined Arms Warfare in the Twentieth Century* (University Press of Kansas, 2001) page 25.

¹⁹⁹ Today, of course, unit cohesion and moral have been completely divorced from social Darwinism. Among the militaries at the turn of the century, however, social Darwinism was both an implicit and explicit component of theories of offensive spirit. Tom Travers, *The Killing Ground: The British Army, The Western Front, and the Emergence of Modern Warfare, 1900-1918* (Allen and Unwin, 1987), Snyder *Ideology of the Offensive* (op cit).

²⁰⁰ The first Japanese all big gun battle ship was the *Satsuma*, laid down in May 1905, three weeks prior to the Battle of Tsushima. *Dreadnought* was herself laid down in late 1905, but was completed earlier. Historically the British built the Japanese capital ships, but, in addition to being the first all

development of battlefleets which sought to engage and destroy enemy battlefleets. This theory of *guerre de escadre* is in stark contrast to the theory of *guerre de course* which emphasizes the use of distributed autonomous ships functioning as raiders that prey on a nation's commercial sea traffic²⁰¹. Mahan argued that commerce raiding was, by itself, a non-decisive nuisance, and that decisive results could not be obtained without first destroying, or blockading, the enemy's fleet²⁰².

Mahanian thought, however, was facing an intellectually organized challenge mounted by Sir Halford MacKinder, who emphasized the importance of control of the "heartland"²⁰³. MacKinder's argument had two components. The first was that the industrial basis necessary to support a dominant naval position could only be developed by countries with

big gun battleship, Satsuma was to be one of the first ships constructed in a Japanese yard, albeit with substantial support from Armstrong and the Tyneside shipwright industrial base. Bernard Ireland, and Jane's Information Group, *Jane's Battleships of the 20th Century* (Harper Resource, 1996).

²⁰¹ The concept of these two "*guerres*" defined debates in naval strategy at the turn of the century, and persisted well into the twentieth century. Kenneth J. Hagan, *This People's Navy: The Making of American Sea Power* (Free Press, 1991), Mark Russell Shulman, "The Influence of Mahan Upon Sea Power: A Review of Kenneth Hagan's *This People's Navy*," *Reviews in American History* 19:4 (December 1991) pages 522-527, George W. Baer, *One Hundred Years of Sea Power: The US Navy, 1890-1990* (Stanford University Press, 1993).

²⁰² Mahan's argument was based on the primacy of trade and commerce to the modern great power. But while advocates of *guerre de course* argued for striking commerce directly, without first gaining command of the seas, Mahan firmly believed that command of the seas had to come **first** (and was achieved by the destruction of the enemy fleet), with the destruction of commerce then done at the leisure of the naval master. Thus the fleet was to be optimized for the destruction of other warships, not the pursuit of unarmed commercial vessels. However, in addition to the ability to control commercial sea traffic, command of the seas allows a power to move its army about over the sea lanes with impunity. According to Mahan, the British practice of landing expeditionary armies in Portugal, Holland, and France in order to influence Continental land warfare was enabled by British command of the seas.

²⁰³ Sir Halford J. MacKinder, "The Geographical Pivot of History," *The Geographic Journal* 23:4 (April 1904) pages 421-437; Sir Halford J. Mackinder, Spencer Wilkinson, Thomas Holdich, Mr. Amery [sic], Mr. Hogarth [sic] "The Geographical Pivot of History: Discussion," *The Geographic Journal* 23:4 (April 1904) pages 437-444.

strong internal resources, and a geographically dispersed empire like that of Great Britain was irredeemably disadvantaged when compared to the continuous and contiguous land mass of Eurasia²⁰⁴. The second was that naval power itself was of declining utility in understanding the power generation capabilities of the great powers. The MacKinder challenge to Mahan was to characterize debates between strategists for a century and play a central role in both World Wars and the Cold War²⁰⁵.

The Mahan MacKinder debate provides an important source of theoretical clash. If MacKinder is correct, and war is determined by control over the heartland, rapid land warfare would be decisive, irrespective of “command of the seas”²⁰⁶. Implicit in Mahanian thought is a longer temporal dimension for warfare, one that does not depend upon a single decisive ground campaign, and instead allows for the question of naval supremacy to be decided first. Mahan argues for a global naval presence because control over the sea lanes

²⁰⁴ The economic costs of maintaining of naval dominance were of great concern to turn of the century British policymakers. See Aaron L. Friedberg, *The Weary Titan: Britain and the Experience of Relative Decline, 1895-1905* (Princeton University Press, 1988) and Jon Tetsuro Sumida, *In Defence of Naval Supremacy: Finance, Technology, and British Naval Power* (Unwin Hyman, 1989).

²⁰⁵ The seminal work here is Paul Kennedy’s *The Rise and Fall of British Naval Mastery* revised edition (Prometheus/Humanity, 2006), chapter 7, “Mahan Versus MacKinder”. See also Christopher J. Fettweis, “Sir Halford MacKinder, Geopolitics, and Policymaking in the 21st Century,” *Parameters* (Summer 2000).

²⁰⁶ It is significant that a discussion of non Mahanian concepts of naval power and strategy were included in the first edition of *Makers of Modern Strategy*, but subsequently dropped in the second edition, edited by Peter Paret, *From Machiavelli to the Nuclear Age*. See Theodore Ropp, “Continental Doctrines of Sea Power,” and Alexander Kiralfy, “Japanese Naval Strategy,” in Edward Mead Earle, with Gordon Crag and Felix Gilbert (editors) *Makers of Modern Strategy: Military Thought from Machiavelli to Hitler* (Princeton University Press, 1971). In the 1930s and 1940s the Germans, clearly influenced by MacKinder, prepared for an offensive ground war against the Soviet Union, and devoted no meaningful effort to obtaining superiority of the seas. Their war strategy involved negating British control of the seas through unrestricted submarine warfare and amassing continental resources through the domination of Rumanian, and eventually Caucasian petroleum, European industry and Ukrainian farmland. See Peter Liberman, *Does Conquest Pay?: The Exploitation of Occupied Industrial Societies* (Princeton University Press, 1998).

provides control over resources and links with colonies and allies, which, over the long run, provide for sustained power advantages²⁰⁷.

There are three related points tied to the general discussion of sea power within the Russo-Japanese War. Was sea power important or decisive? If so, was it brown water operations or blue water operations that were critical? And finally, how did naval power directly affect land combat?

The first controversy raised was the actual importance of naval warfare within a larger strategic conflict. The Russo-Japanese War involved major engagements on land and at sea. This provided the opportunity for observers and historians to measure the comparative importance of the outcomes of these engagements to the overall outcome of the war. Army and Navy observers were able to directly ascertain the influence of these engagements on subsequent ground phases of the war as well as judge their decisiveness on result of the war.

Second, the combination of blue water and brown water operations gave observers the opportunity to comment on different degrees and applications of naval power. There were battles fought in the open ocean as well as within the range of coastal artillery, and, indeed, attacks on ships in port by coastal attack vessels. There were examples of commerce raiding and naval interdiction, as well as battlefleet engagements. While naval technologies such as

²⁰⁷ Note the similarity between a Mahanian conception of warfare and the previously discussed issue about war duration. In a long war access to resources is essential. Mahan is primarily about ensuring access to resources. Thus a Mahanian view of the world *implies* that wars are not a matter of a single decisive land battle. Of course, Mahan may implicitly preempt a war all together by focusing on control of resources to maintain a peaceful hegemonic system. But even in that instance Mahanian thinking reinforces defense dominance, as no rational land power would challenge a naval hegemon.

submarines and airplanes were not employed, the war did see the employment of torpedoes fired from capital ships as well as specialized torpedo attack boats, the use of offensive and defensive mine laying and minesweeping, and more modern naval architecture stressing battleships that emphasized a single large caliber of armament, rather than bristling with lighter guns²⁰⁸.

Finally, engagements such as the siege of Port Arthur and the battle of Nan-shan involved the use of naval gunfire in support of land warfare. As already noted, the appropriate tactics for artillery were hotly debated at the turn of the century. Naval gunnery added another dimension to this debate as it represented subordination of the naval assets to a specific tactical action on the ground, i.e., placing control of naval assets under an Army command to maximize the probability of achieving a specific tactical effect on the ground²⁰⁹. While closely integrating naval fires with ground forces would offer the navy a new mission, it would also challenge the Mahanian concept of global domination through deep blue water operations by subordinating the autonomy of this littoral force to the tactical exigencies of land warfare and the direct command of Army officers.

²⁰⁸ Indeed, the first “all big gun” battleships were laid down by the British and the Japanese in 1905, prior to the Battle of Tsushima (they were envisioned and designed sometime before construction began). The emergence of all big gun battleships was one of the hallmarks of the shift in naval architecture prior to the First World War, a notion even acknowledged in popular history. See Robert K. Massie, *Dreadnought: Britain, Germany, and the Coming of the Great War* (Random House, 1991), Arthur J. Marder, *From the Dreadnought to Scapa Flow: The Royal Navy in the Fisher Era, 1904-1919; Volume 1: The Road to War* (Oxford University Press, 1970), and Ernest Andrade, “The Battle Cruiser in the United States Navy,” *Military Affairs* 44:1 (February 1980) pp 18-23.

²⁰⁹ Note that in the Mahanian conception of warfare the effects of the Navy and the ground campaign are strategic. By ensuring command of the seas the Navy allows one side to have access to the resources and capital of the world economy while simultaneously isolating the opponent. The ground campaign may be the *coup de grace* through which this power differential is manifest, but the tactical course of land battles is not directly a subject of action by the Naval force.

The Conduct of Naval Battles and Warship Design

The two great personalities of early twentieth century naval warfare, Alfred Thayer Mahan and Sir John “Jackie” Fisher, agreed that ocean going navies were essential for global ambitions. However they did not agree on the actual composition of these navies. Fisher advocated fast “all big gun” capital ships that could engage the enemy at a time and range to their advantage. Fisher felt that the all big gun battleship was optimized to bring the most firepower into battle at the longest range. Superior speed allowed the fleet to choose the time and circumstances of any engagement, and keep the engagement at the optimal range. Given the emphasis on speed and firepower, something had to yield, and Fisher felt that was armoring and the secondary battery of medium caliber guns. Decisively engaging the enemy at long range made the shorter ranged secondary armament irrelevant, and minimized the need for armor²¹⁰. Mahan argued for a larger fleet of smaller, slower ships with significant secondary armament²¹¹. This secondary armament, while unable to deliver a fatal salvo on to a target battleship, had a greater rate of fire and could destroy fire control and shipboard communications as well as disrupting the crew physically and morally. For Mahan, it was this sustained “volume of fire” which determined fleet engagements. Thus Mahan wanted a mixed armament on his battleships²¹². The actual sinking of a ship was a matter of chance.

²¹⁰ In many respects, this is a Clausewitzian economy of force argument. Secondary armament was wasted armament, because it could not be brought in to use at the decisive moment.

²¹¹ William M. McBride, *Technological Change and the United States Navy: 1865-1945* (Johns Hopkins University Press, 2000); Robert L. O’Connell, *Sacred Vessels: The Cult of the Battleship and the Rise of the US Navy* (Westview Press, 1991), Nicolas A. Lambert, *Sir John Fisher’s Naval Revolution* (University of South Carolina Press, 1999).

²¹² McBride, *Technological Change* (op cit)

To minimize the effects of a lucky shot significantly reducing fleet firepower, a larger number of small vessels was preferable to fewer, more precious and powerful, ships.

A second debate among Naval strategists concerned the use of torpedo boats. As capital ships developed, they became more expensive. Some argued that torpedo boats, which were inexpensive light vessels armed with torpedoes, could be used to counter the capital ship²¹³. If capital ships were vulnerable to small ships, the naval balance of power could shift considerably, as more countries with less favorable naval positioning could challenge naval powers²¹⁴. Large, expensive navies could be obviated with the rapid construction of flotillas of small, disposable, ships²¹⁵. Unlike the later introduction of the submarine, a torpedo boat required technology and infrastructure that was well within the means of even the smallest naval power²¹⁶.

²¹³ Theodore Ropp, *The Development of a Modern Navy: French Naval Policy 1871-1904* (US Naval Institute Press, 1987) (Edited by Stephen S Roberts), especially Chapter X, "The *Jeune Ecole*".

²¹⁴ Even if the major naval power could counter the torpedo boat threat by keeping their fleet at anchorage within a fortified port, the weaker naval power would have won a strategic victory, as a fleet confined to port is a fleet that is not off in command of the seas.

²¹⁵ The fear (and hope) that a cheap weapon can exploit a vulnerability in an expensive weapon, and thus very quickly alter an established power relationship between two militaries recurs throughout history. George Friedman and Meredith Friedman, *The Future of War: Power, Technology, and American World Dominance in the 21st Century* (Crown Publishers, 1996). Now tied to the concept of asymmetric warfare, it occurred as torpedo boats threatened capital ships, as hand launched rockets threatened tanks (and later helicopters) and now as improvised explosive devices (IEDs) threaten soft and armored vehicles.

²¹⁶ Fisher himself was ambivalent about the threat posed by the torpedo boat. While he continued to believe that all big gun battleships could dominate the high seas and that fast battle-cruisers could engage in commerce raiding and engage enemy battleships he hedged by advocating cruiser screening forces to destroy torpedo boats before they could come within range of the capital ships, and he sponsored research in improving torpedo ranges. He even envisioned using flotillas of torpedo boats

The turn of the century notion that torpedo boats could *not* defeat capital ships is *necessary* to believe in Mahan's view of naval strategy. While an ocean going Navy may bring with it certain advantages, these advantages are worthless if that Navy could be sunk, or blockaded in port, by cheap torpedo boats that can be built by any country with a coastline. Command of the seas would not be guaranteed by a fleet. Instead, the seas become dangerous contested geography, and advantage is conferred on the belligerent with the best access to territorial resources, i.e., the belligerent in control of the heartland (MacKinder), or to the belligerent that controls critical maritime areas from points of strength on land (Corbett).

These questions pertaining to the interplay between naval and ground forces in a broader war can add more leverage to our attempts to understand learning, and specifically tease out some predictive differences betwixt the contending theories. The Bayesian model would predict that there would not be variation among the observers about these naval questions²¹⁷. A bureaucratic theory would predict that naval and army observers in general would clash over the interplay between naval warfare and land warfare. Moreover, the question of torpedo boats gives insight into whether a motivated bias existed. In order to believe that control of the high seas with capital ships was not decisive, it was necessary to believe that capital ships could be neutralized by smaller vessels. Moreover, we would expect that belief to be present among a broader strategic community than just those within the Navy, as the

(and later submarine) to screen the British Isles while the Grand Fleet was deployed on the high seas. See Lambert, *Sir John Fisher's Naval Revolution* (op cit).

²¹⁷ At most, a Bayesian approach would countenance Army observers that ignored naval questions entirely. However the resulting literature, both the official histories and the publications on why Japan won, would have to confront the larger issues of naval strategy.

MacKinder and Mahan positions were concepts of grand strategy, not just specific naval strategy.

Britain and the United States, like Japan, were primarily island naval powers²¹⁸. Germany and France, like Russia, were confined to the land. Under a Bayesian model this should be irrelevant, as observers should be drawing the same lessons. As noted, under the bureaucratic models we would predict debate among observers based on their branch of service, irrespective of their country of origin. Under the cognitive-cultural model, however, we would expect the nationality of observers to matter. The Mahanian concept of command of the sea should lead observers to emphasize those matters, and discount the importance of littoral operations and the threat of torpedo boats to capital ships²¹⁹. But even within the Mahanian observers, we would expect to see a disagreement about the armament of ships, with the British favoring the all big gun design and the Americans favoring a more numerous mixed armament fleet. Mahan versus MacKinder deals with grand strategy, while Mahan versus Fisher deals with details of naval construction and tactics. Conversely, the continental powers of Germany and France would pay less attention to overall command of the seas, but stress the importance of mobility and supply over land, the utility of coastal support missions, and the threats posed to capital ships by torpedo boats.

²¹⁸ The United States in 1904 was in the midst of a shipbuilding program that would propel it to the first rank of Naval powers, although it had not yet achieved this status. Baer *One Hundred Years of Sea Power* (op cit).

²¹⁹ The strength of the Mahanian vision within a cultural-cognitive framework for the US has been put forward by Rhodes "Sea Change" (op cit), and a similar case has been made for the British in Jon Tetsuro Sumida, *Inventing Grand Strategy and Teaching Command: The Classic Works of Alfred Thayer Mahan Reconsidered*, (Johns Hopkins University Press, 2000); Schurman *The Education of a Navy* (op cit)

Fire Effect: Suppressive or Destructive

Industrialized warfare had a great effect on the design and employment of artillery²²⁰. Improved chemistry, physics, and metallurgy allowed for the design of specialized shells capable of piercing fortifications, spreading shrapnel, churning ground, and other special tactical effects. Improved metallurgy also enabled the development of artillery barrels and breeches capable of withstanding higher pressures and greater temperatures, allowing for improved rates of fire, reduced crewing requirements, and enhanced projectile range, accuracy, and weight. The introduction of the recoilless artillery mechanism allowed for placing sustained fires on target without time consuming resighting after each shot²²¹. Mass production techniques allowed for the manufacture of larger quantities of more reliable ammunition, as well as more uniform artillery pieces overall. This enhanced uniformity and reliability led to improved accuracy. Advances in optics allowed for more accurate fire, and advances in communications allowed for a more centralized and responsive fire control system. Concurrently the introduction of the water cooled, and later the air cooled, machine gun increased the rate and depth at which even small groups of soldiers could project fields of fire. While all of this was known, what was not understood, and what had not been demonstrated, were the net effects of these changes.

²²⁰ Shelford Bidwell, and Dominick [sic] Graham *Fire Power: British Army Weapons and Theories of War* (George Allen & Unwin 1982), and Shelford Bidwell, *Gunners at War: A Tactical Study of the Royal Artillery in the Twentieth Century* (Arms and Armour Press, 1970).

²²¹ Recoil, aside from being dangerous to personnel and horses, also moves the artillery piece across the ground and can even change the elevation of the barrel. Thus even if a round is fired perfectly on target, it becomes problematic to place a second round on target. See Bidwell, *Gunners at War* (op cit), Bidwell and Graham *Fire Power* (op cit), and Mark E. Grotelueschen, *Doctrine Under Trial: American Artillery Employment in World War I* (Greenwood Press, 2001)

Fires can be employed to directly destroy targets, i.e., the value of artillery is in killing people or destroying fortifications. Artillery can also be employed to simply suppress enemies in certain zones. Here the destructive power of the artillery is incidental. The objective of suppressive fires is to keep an enemy immobilized and unable to fire effectively²²². In such circumstances the maneuver elements working with artillery can be brought in to engage the enemy in a favorable situation, or even to bypass the enemy entirely. Even if the artillery is not responsible for destroying a single fortification or taking a single life, it could be used to decisive purpose if it allows the maneuver units to accomplish these tasks.

Note that depending on the intended effect the optimal design of artillery and projectiles will change. For destructive fires accuracy is essential, as rounds must be delivered exactly on the target to be destroyed. If both sides believe that destructive fire is the best use of artillery, then engagements rapidly devolve into artillery duels, as both sides try and kill each other's artillery, in order to then be able to fire unmaligned on other, less immediately threatening, targets. Destructive artillery duels imply a high premium placed on technology and modernization, as even marginal advantages in rates of fire and especially range can have major effects in artillery duels²²³.

²²² Fire effectiveness can be hampered in both accuracy and rates of fire if spotters cannot see, if crews cannot man positions, and if shooters are under protective cover in fortifications or behind natural obstacles. Subjecting an enemy to an artillery barrage can have all of these effects.

²²³ Per the "law" of Lanchester's square equations quantity is more important than quality. The square law pertains to aimed fire, while the linear law (which implies the equal importance of quantity and quality) pertains to undirected fire. Lanchester himself only formalized his equations after the First World War. See Frederick William Lanchester, "Mathematics in Warfare," in James R. Newman (editor), *The World of Mathematics Volume Four* (Simon and Schuster, 1956) pages 2138-2157, and Philip M. Morse, and George Kimball, *Methods of Operations Research* (originally published jointly in sections by MIT Press, John Wiley & Sons, and the Office of Scientific Research and Development-US Navy in 1951, republished in its entirety by Military Operations Research Society, 1998) pages 63-80. Arguably further improvements in quality metrics like accuracy (once one meets the threshold of

Furthermore, for destructive fires, rounds must be able to penetrate even the hardest of fortifications to achieve destructive effect. The number of artillery pieces and shells will probably have to increase, as in most cases there will be numerous targets to engage. Finally, artillery can act independent of maneuver units, as it can conclusively engage targets, and would not require a close range follow up by either infantry or cavalry to dispatch the enemy. This not only sets the artillery free of the maneuver units, but it offers the allure of a relatively “cheap” battlefield victory, i.e., one that is done while minimizing the expenditure ones own blood, if not necessarily treasure²²⁴. Long distance precision engagement advocates believed that the artillery could deliver battlefield victories without the large scale, costly, clashes of infantry and cavalry that had, up to that point, characterized warfare.

Conversely, if one hopes to suppress accuracy, and even penetration, effects are less important considerations. It is desirable to have more disbursed effects from single shells. Rather than simply having a shell absolutely destroying a square foot of ground one would

putting a round within a CEP that kills the enemy’s artillery) and rates of fire are less important than quantity. Range, however, is not just a “quality” variable, as the side with superior range can engage the enemy such that the quantity of shooters that the enemy is able to bring to the engagement is minimized. Thus, while range is more of a qualitative factor, its actual effect on an engagement may be quantitative.

²²⁴ It is worth noting how closely the belief of those who advocated modern destructive fire tactics for artillery at the turn of the century would foreshadow the precision bombing advocates of the 1930s through the present day. Despite the emergence of disconfirming evidence, each new technological development offers hope to those who believe that long range precision engagement can avoid the need for excessive loss of life (at least among those on the shooting side). See Robert A. Pape, *Bombing to Win: Air Power and Coercion in War* (Cornell University Press 1996); Stephen L. McFarland, *America’s Pursuit of Precision Bombing 1910-1945* (Smithsonian Institution Press, 1995); Michael S. Sherry, *The Rise of American Airpower: The Creation of Armageddon* (Yale University Press, 1987); and Stephen D. Biddle, *Afghanistan and the Future of Warfare: Implications for Army and Defense Policy* (University Press of the Pacific, 2004).

prefer it to scatter its effect over many square yards²²⁵. More importantly, it is necessary to subordinate the command and control of artillery to the maneuver elements. A suppressive fire is simply wasted ammunition and effort if it is not coordinated with maneuver units, to facilitate either the bypass of or closure with the suppressed targets²²⁶. The tighter the links in command, control, space, and time betwixt the suppressive firing units and the maneuver units, the better²²⁷. Thus the infantry and cavalry would still play a vital role in the ground war, and while casualties may be reduced by suppressive fire, they would still be inflicted on both sides once the armies close²²⁸.

²²⁵ This implies that the warhead should fragment, rather than penetrate, and that the shell should be fuzed for an air burst. While airburst fuzes are more complex than simple nonfuzed projectiles, an airburst warhead needs only to have the explosive power necessary to fragment the casing and can be stuffed with pieces of scrap metal. Penetration warheads, in contrast, need precisely shaped warheads of specific material, specialized charges, and other advanced technologies, many of which were in their infancy at the turn of the century. Furthermore, fixed fortifications continued to evolve new methods of defeating projectiles, be it simply adding more concrete and iron (later steel) or including specialized armor alloys and materials. Thus the technology burden of maintaining effective suppressive weapons is much smaller than that of maintaining effective destructive weapons.

²²⁶ As artillery tactics evolved and command and control improved the lag (both in time and in space) between the suppressive fires and the maneuver units decreased.

²²⁷ Indeed, during WWI it was felt that it was better for maneuver elements to lose a few soldiers to friendly fire from short rounds than it was to leave a gap between the suppressive fire and the advancing soldiers. Bidwell and Graham *Fire Power*, (op cit); Robin Prior and Trevor Wilson, *Passchendaele: The Untold Story* (Yale University Press, 1998).

²²⁸ Ideally, of course, the attacker would have shaped the closure through the use of fixing and suppressive fire prior. See Captain Sir Basil H. Liddell-Hart, *Strategy: The Indirect Approach* (2nd revised edition, Frederick Praeger, 1954) in which he compares war to two people fighting in the dark, one hand swinging a hammer and the other seeking to grab on to (or fix) the enemy in order to deliver the blow.

Fire Employment: Direct or Indirect

A related concept to fire effect is whether artillery should be employed in a direct fire or indirect fire method. Direct fire weapons are those that are fired at a low angle of elevation on targets that are within a direct line of sight (LOS) to the gun crew²²⁹. Indirect fire weapons rely on a separate spotter who has LOS to the target, or on preprogrammed firing patterns based on maps and timetables²³⁰. In theory, both direct and indirect fires could be used for suppressive or destructive effects. In practice, the limitations of 1904-05 technology seemed to make it difficult to use indirect fire for destructive effects on all but fixed targets.

Direct fire has advantages of accuracy, especially against moving targets, but it exposes the ground crew to attacks from infantry (which use direct fire weapons) as well as enemy artillery. As the direct fire weapon has LOS to the target, so too must the target have LOS back to the direct fire weapon. Direct fire also places shallower range limits on engagement,

²²⁹ Historically, a direct fire artillery piece is a “gun”, while an indirect fire piece is a “howitzer” or a “mortar”. In practice the distinction between guns and howitzers broke down during the 20th century. To complicate things the British referred to howitzers by caliber (two inch), and guns by weight (60 pound). This system also broke down. By the 1930s militaries had developed the “gun howitzer”, completely blurring the distinction. At the time of the Russo-Japanese War and prior to World War One, however, the howitzer / gun distinction was still fairly clear. See Oliver F. G. Hogg, *Artillery: Its Origin, Heyday, and Decline* (C Hurst & Co, 1970); Bruce I. Gudmundsson, *On Artillery* (Praeger 1993) and Ian V. Hogg, *Allied Artillery During World War One* (Crowood Press, 1998). In this dissertation I will use the now obsolete convention of distinguishing betwixt guns and howitzers, and will use “artillery piece” generically to refer to both types.

²³⁰ A preprogrammed artillery attack would have instructions to hit such-and-such coordinate at a specific time, and then specify how the aim was to be adjusted. These were used during the First World War. Without spotters, however, the preprogrammed attack could get ahead of, or more gruesomely, fall behind, the timetable being followed by the maneuver element. This would, at best, make the artillery attack irrelevant and expose the maneuver element to enemy attacks, or, at worst, inflict “friendly fire” casualties on the maneuver units. See John Keegan, “Chapter 4: The Somme, July 1st, 1916,” in *The Face of Battle* (Viking Press, 1976) for the theory and problems with such tactics.

as gravitational acceleration will bring shells down over long ranges²³¹. Furthermore, because the artillery is firing through, or above, friendly infantry and cavalry it imposes practical limits on combined arms operations. It is possible to combine indirect fire with natural or man made obstacles and conceal the firing unit, which adds protection to the crews and the artillery piece itself.

Direct fire weapons, because they fire through the target, are extremely effective against columns of advancing infantry. Indirect fire brings shells down on a target, and is therefore effective against a frontally protected or entrenched target. Indirect fires also have the tangential effect of cutting wire, and, after a few salvos, churning ground. Churned ground slows the transversal rate of hostile and friendly infantry, but it also provides cover and concealment for infantry²³².

Infantry Assault Tactics

The increasing lethality of modern weapons and the improvements in defense technologies from the end of the Napoleonic wars to the outbreak of the First World War did not go unnoticed. As tacticians struggled with data from the Wars of German and Italian

²³¹ By the laws of physics range can be extended by increasing velocity, but there are practical technological limits on velocity increases. Shells also can be kept airborne longer by elevating the gun, but at that point the gun might as well be changed from a direct fire to indirect fire weapon, as the shell will come down on a target, rather than blow through the target. To some extent this can be obviated by placing the gun in an elevated position above the battlefield, but terrain is often not so cooperative.

²³² The grim effects of churned ground, especially wet ground, were seen in World War One. See Robin Prior and Trevor Wilson, *Passchendaele: The Untold Story* (Yale University Press, 1998).

Unification, the Franco-Prussian War, the US Civil War, and various colonial wars (including the unique Boer War) they were well aware that the modern infantryman would face a very different battlefield than he faced in 1815²³³. What was not well understood was how best to adopt infantry tactics to the new technologies. The Russo-Japanese War would see numerous attempts to use infantry on the offensive, and offer the chance for militaries to update their beliefs about the efficacy of different tactical systems.

Some argued that the biggest obstacle to successful infantry attack was lack of offensive spirit. The modern battlefield was a frightening place to be, and without strong discipline and surety of purpose infantry would never leave defensive positions. In addition to inculcating infantry with the proper offensive spirit, tactically it would be necessary to bunch infantry together. Large cohesive groups of men would draw reassurance from each other, and would be within sight of their officers and NCOs, and could therefore be commanded to advance. It was recognized that the advance would be costly, however it could proceed²³⁴.

Others argued that the lethality of the battlefield made such attacks impossible. Instead the solution was to gradually disperse the attackers into small groups of men. These small groups would use the natural cover and concealment of terrain, perhaps augmented by the

²³³ J. F. C. Fuller, *The Conduct of War, 1789-1961* (original 1961, Da Capo edition 1992); Antulio J. Echevarria, *After Clausewitz: German Military Thinkers Before the Great War* (University Press of Kansas, 2000) and "The 'Cult of the Offensive' Revisited: Confronting Technological Change Before the Great War," *Journal of Strategic Studies* 25:1 (March 2002) pages 199-214; John English and Bruce Gudmundsson, *On Infantry*, revised edition (Praeger 1994) Paddy Griffith, *Battle Tactics of the Civil War* (Yale University Press, 1989).

²³⁴ Echevarria, "The 'Cult of the Offensive' Revisited" (op cit), House, *Combined Arms Warfare* (op cit)

efforts of sappers²³⁵ and with the use of covering fire advance in short bounds over contested ground, closing with the enemy gradually. The problem of motivation could be overcome by both training and the granting of initiative to lower ranks²³⁶. Such tactics assumed a more sophisticated system of command and control, a higher level of competence and training among junior officers, NCOs, and the private soldier, and, perhaps most importantly, enough organic firepower carried with these small groups that they could successfully engage the enemy once they closed the distance²³⁷.

Role of Cavalry

Traditionally the cavalry had three roles in warfare. They were responsible for reconnaissance, they were responsible for shock attacks (the cavalry charge) and they conducted pursuit of a beaten foe. Evidence from the US Civil War onwards seemed to suggest that their ability to execute on these roles was waning. Increased troop density

²³⁵ Also known variously as engineers and pioneers.

²³⁶ Eventually this distribution of initiative became a key component of the German tactical system, the vaunted *auftragstaktik* inelegantly rendered into English as “mission-type-orders”. Timothy Lupfer, *The Dynamics of Doctrine: The Change in German Tactical Doctrine During the First World War* (Leavenworth Paper 4, US Government Printing Office, 1981).

²³⁷ One of the central arguments made against these tactics prior to the First World War was that small groups, even if successful in closing the distance to the enemy, would be insufficient to take any objective. Bruce I. Gudmundsson, *Stormtroop Tactics: Innovation in the German Army 1914-1918* (Praeger 1989); Samuels, *Command or Control?* (op cit). Yet there were Germans, notably von Schlichting, who advocated the looser formations. See Eric Dorn Brose, *The Kaiser's Army: The Politics of Military Technology in Germany During the Machine Age, 1870-1918* (Oxford University Press, 2001) and Robert T. Foley, *German Strategy and the Path to Verdun: Erich von Falkenhayn and the Development of Attrition, 1870-1916* (Cambridge University Press, 2005). For view of tactics beyond Germany see Azar Gat, *The Development of Military Thought: The Nineteenth Century* (Oxford University Press, 1992, reprinted 2000).

meant that scouting was less important, as locating the enemy was no longer so difficult²³⁸. Moreover, increased rifle accuracy at greater ranges meant that the scouting advantage provided by horseback riders was in jeopardy. The opportunities to use the *arme blanche* and conduct shock attacks seemed to be fading, especially against modern enemies, though this too was contentious²³⁹. Only pursuit seemed relatively immune to changes. Thus by the outbreak of the Russo-Japanese War there was a debate on the role of cavalry within all of the major militaries.

On one side were those who defended cavalry's traditional roles. Others argued that cavalry were nothing more than mounted infantry. That is, cavalry used horses to get to the field of battle, but once there dismounted and fought like traditional infantry. Thus, they should be armed like infantry, drilled like infantry, and fall under the command of infantry²⁴⁰. Of course, this was anathema to the traditional cavalry, as it reduced their stature as an independent arm, coequal with infantry and artillery. This debate was manifest both overtly, in discussions about the role of cavalry, and covertly, in discussions about the arming of cavalry. Of course, replacing the lance and cutlass with the rifle, and providing dismounted fire training, would have the effect of turning cavalry into dismounted infantry, but was simply a more subtle way of making the point.

²³⁸ Conducting detailed reconnaissance, such as understanding the enemy's order of battle and deployment, was (and remains) very important, but making contact no longer posed a problem.

²³⁹ Colonial operations were another matter. Against undisciplined poorly armed enemies the cavalry charge could still be used to great effect. See Bryon Farwell, *Queen Victoria's Little Wars* (Harper & Row, 1972).

²⁴⁰ Traditionally cavalry carried weapons like lances, pistols, and swords, (which together made up the *arme blanche*) which were effective from horseback, when the rider needed one hand to handle the horse. Mounted infantry would carry rifles and bayonets. Jonathan M. House *Toward Combined Arms Warfare: A Survey of Twentieth Century Tactics, Doctrine, and Organization*, (Leavenworth Paper 2, Army Combat Studies Institute, US Government Printing Office, 1984).

The Impact of Fortifications and Hasty Entrenchments

Prior to WWI the European landscape was dotted with fortresses. While they looked different from the castles of medieval times, their purpose was similar. They sought to use advanced materials and geometry to make themselves invulnerable to a determined assault and bombardment²⁴¹. Further, through the careful choice and preparation of ground the builders of the fortifications sought to dominate strategically important points which controlled the outcome of warfare along whole fronts. Even if such fortresses could be overcome, the attack would be entail a tremendous sacrifice of resources and time for an objective that was not necessarily, itself, intrinsically important²⁴². Most European fortifications were extremely elaborate, consisting of interconnected strong points, reinforced deep tunnels, shaped ground, disparate and coordinated obstacles, and so forth. The building of a fortification could take many years, and required constant upkeep as advances in range and accuracy created new opportunities for designing killing ground. Standard infantry soldiers, in contrast, carried only shovels, with an occasional pickaxe among specialists.

Advances in the range, accuracy, and lethality of munitions seemed to obviate any advantage that could be gained by hastily improved positions. In colonial warfare the importance of

²⁴¹ See, Henry Guerlac, "Vauban: The Impact of Science on War," in Peter Paret (editor), *Makers of Modern Strategy Second Edition* (Princeton University Press 1986).

²⁴² By intrinsically important I mean that the fortress is not necessarily a capital city, a major population center, a ring around a critical resource, or a sea port.

hasty improvements against even poorly armed foes had been well demonstrated and commented upon²⁴³. However, when facing a modern military there were no data on the importance of hasty improvements. Some plausibly argued that improved technology would negate the traditional tactical advantages of cover and concealment because the front would be so fluid, and events would transpire so rapidly, that entrenched units would be bypassed and idle during the critical battles²⁴⁴.

A belief in the weakness of hastily improved defenses was critical to proponents of offensive advantage. For if hastily improved positions and simple entrenchments were enough to stop, or even meaningfully slow, an offensive then the overall pace of complex campaigns could be thrown off by the actions of a few men with shovels. Hasty improvements can be made in a matter of hours over nearly any sort of ground. Even planning an attack that bypasses fixed fortifications would be no guarantee of rapid offensive success if simple infantry could build effective entrenchments on command.

Conversely, even if one believed in the power of traditional fortifications, believing in the ability to easily overwhelm hasty entrenchments allowed a modern Army to move quickly and with impunity through areas that were not endowed with these elaborate fortifications.

²⁴³ The British experience during the Zulu War of 1879, including the great disaster at Isandhlwana and the lesser disaster at Intombi, when set in contrast with Rorke's Drift, made the point very clearly. Donald R. Morris, *The Washing of the Spears: A History of the Rise of the Zulu Nation Under Shaka and Its Fall in the Zulu War of 1879* (Simon & Schuster, 1965). British tacticians learned the lesson, and enshrined it in the still relevant *Defence of Duffer's Drift*, written by Captain E. D. Swinton under the pseudonym of Lieutenant Backsight Forethought.

²⁴⁴ Note how the hope that advances in technology can overcome the limits imposed by cover and concealment found its modern echo in some of the more enthusiastic Revolution in Military Affairs (RMA) literature. Stephen D. Biddle, "The Past as Prologue: Assessing Theories of Future Warfare," *Security Studies* 8:1 (Fall 1998) pages 1-74

The defender would need to spend a significant amount of time, often a matter of years, to build effective fortifications. By the time the fortifications were completed the war would be long over.

The Effects of the First World War

While there was much debate about these highlighted matters prior to the First World War, there was very little after the war. The First World War offered seemingly inarguable evidence about what was possible and what was impossible given the nature of modern warfare. After the war military theorists looked to technological and doctrinal innovation as a way to break out of the conditions, but few seriously disputed the existence of those conditions²⁴⁵. This section briefly outlines the results of World War One for the specific dependent variables of interest in this study.

Strategically, war duration was found to be quite lengthy, and defeat of major powers was not brought about by occupation²⁴⁶. Domestic morale proved to be important, with Russia leaving the war in 1917 due to a revolution (which consumed the Romanov dynasty),

²⁴⁵ It is beyond the scope of this paper to discuss the full set of implications of the First World War. For superb discussions, as well as further details, see Biddle, *Military Power* (op cit); Paddy Griffith, *Battle Tactics of the Western Front: The British Army's Art of Attack, 1916-18* (Yale University Press, 1998); Robin Prior and Trevor Wilson, *The First World War* (Cassell 1999); and Gary D. Sheffield, *Forgotten Victory: The First World War, Myths and Realities* (Review/Hodder Headline, 2002); House, *Combined Arms Warfare* (op cit); Lupfer *Dynamics of Doctrine* (op cit); Larry H. Addington, *Patterns of War Since the Eighteenth Century* (second edition, Indiana University Press, 1994); Hew Strachen, *The First World War Volume I: To Arms* (Oxford University Press, 2003); and *The First World War* (abridged edition Viking, 2004). Strachen's first volume of what is a planned trilogy is immense, and while Viking abridged edition sacrifices much detail, it does provide a preview of the forthcoming two volumes.

²⁴⁶ Minor powers such as Belgium, Serbia, Greece, Montenegro, Rumania, and Bulgaria were defeated and occupied.

Germany making peace in the face of near revolution, the Austro-Hungarian Empire disintegrating into smaller ethnically based nations, and Britain having to deal with a near revolution in Ireland. Domestic capacity also became essential, as early stores of munitions were consumed in the first weeks of war. Later offensives would consume months worth of industrial production over the course of days²⁴⁷. Of equal importance, the access to capital markets to finance the production of such numbers of munitions and to equip and feed the armies in the field represented a tremendous drain on the economies of the belligerents²⁴⁸. Strategically, first strike seemed not to matter one whit, with the early Russian successes in East Prussia, notably the Battle of Gumbinnen, being obviated by much greater German successes later at Tannenberg, and campaigns lasting months, if not years.

With respect to operations on land, surprise was not a decisive factor. The increased depth of the battlefield made surprise merely a transitory advantage, and one that could not be converted, *ceteris paribus*, into victory. Hasty improvements were quite effective, and hastily prepared ground allowed the British and French to hold the Germans in 1914, and even allowed the Belgians to slow the Germans, throwing off the timetable of the vaunted Schlieffen plan. Direct fire artillery was obliterated during the first months of the war, and only made a late and limited comeback with the introduction of the self propelled armored direct fire vehicle, or tank²⁴⁹. Destructive fire was effective against obsolescent fortresses

²⁴⁷ B. J. C. McKercher, "Economic Warfare," in Hew Strachan (editor), *The Oxford Illustrated History of the First World War* (Oxford University Press, 1998) pages 119-133.

²⁴⁸ Hew Strachan, "Economic Mobilization: Money, Munitions, and Machines," in Hew Strachan (editor), *The Oxford Illustrated History of the First World War* (Oxford University Press, 1998) pages 134-148

²⁴⁹ Bidwell and Graham *Firepower* (Op cit); Bidwell *Gunners at War* (op cit); Harris, "Rise of Armour" (op cit)

and infantry in the open, but suppressive fires closely coordinated with infantry were found to be of much greater utility under a much broader set of circumstances and objectives²⁵⁰. Once command and control improved, the tightly linked suppressive “rolling barrage” and disbursed maneuver units made advance, and even breakthrough, possible²⁵¹.

Massed infantry assaults invariably led to costly failure²⁵². The development of infiltration tactics, based on small groups of men using cover and concealment to advance in bounds, (and backed with suppressive artillery and machine gun fire) eventually led to the breaking of trench lines. Germans created specialized units called *stosstrupen* (or stormtroopers) that, by the end of the war, were able to repeatedly break through Allied lines²⁵³.

The horse mounted cavalry played almost no role after the first weeks of war on the Western Front, not even participating in the near German breakthrough in Ludendorff’s 1918 offensive or the crumbling of the German lines during the final months of the war. On the East cavalry was used to scout, but played no meaningful role in the important actions such

²⁵⁰ The tight linkage between suppressive fires and maneuver was illustrated during a number of battles. In instances when maneuver elements lagged the suppressive fires by even a few minutes the defender had the opportunity to reoccupy positions and unleash their own lethal fires on the maneuver elements.

²⁵¹ Biddle, *Military Power* (op cit)

²⁵² Rawlinson’s disastrous decision to forgo any skirmishers and attack with only massed infantry formations at the Somme still stands as the single worst day for the British Army. Griffith *Battle Tactics of the Western Front* (op cit); Keegan *The Face of Battle* (op cit)

²⁵³ Griffith, *Battle Tactics of the Western Front* (op cit); Lupfer, *Dynamics of Doctrine* (op cit); House *Combined Arms Warfare* (op cit). Failure to capitalize on these breakthroughs was due to a lack of maneuver units and an overall lack of strategic vision to complement the operational excellence of the German army. Michael Geyer, “German Strategy in the Age of Machine Warfare, 1914-1945,” in Peter Paret (editor), *Makers of Modern Strategy* Second Edition (Princeton University Press 1986) pages 527-597

as Tannenberg, the Brusilov offensive, and the Central Powers' counteroffensive. Where cavalry was effective was when it was used as mobile mounted infantry, which was limited to the Eastern front.

The French *élan* and the offensive spirit on both sides served merely to increase the rate at which men were killed in a horrible series of Western Front offensives between 1914 and 1917. However, even after the ill considered Nivelle offensives (1916-1917), including the Second Battle of Aisne when the French Army mutinied, it still retained enough defensive strength to keep the Germans contained along a broad front²⁵⁴.

For the Naval variables, the lessons were a bit more nuanced. British Sea Power had certainly allowed them to implement a continental blockade that gradually eroded civilian morale and domestic consumption among the Central Powers. Arguably these shortages and discontentment exacerbated the pressures on the German government after battlefield defeats in 1918, but attributing decisive causality to this goes beyond the facts. Surface *guerre de course* proved to be ineffective, with German surface raiders providing dramatic but irrelevant sideshows²⁵⁵. Tactically, the big gun design seemed to have been vindicated while the lightly armoured battlecruiser displayed tremendous shortcomings, with its advantages

²⁵⁴ David Englander, "Mutinies in Military Morale," in Hew Strachan (editor), *The Oxford Illustrated History of the First World War* (Oxford University Press, 1998) pages 191-203

²⁵⁵ Dan Van der Vat, *Gentleman of War: The Amazing Story of Commander Karl von Muller and the SMS Emden* (William Morrow, 1984); John Walter, *The Kaiser's Pirates: German Surface Raiders in World War One* (US Naval Institute Press, 1994); Edwin P. Hoyt, *The Germans who Never Lost: The Story of the Konigsberg* (Funk & Wagnalls, 1968). Of course the introduction of the submarine in a *guerre de course* role showed considerably more promise.

greater speed being overcome by the deficiencies of lighter armor²⁵⁶. The torpedo boat had been broadly ineffective, as an emergent class of ship, the “torpedo boat destroyer” (or simply “destroyer”) served to keep torpedo boats outside of the range of their torpedoes²⁵⁷. Only one capital ship was destroyed by a surface launched torpedo, the German obsolete pre-dreadnought SMS *Pommern* which was struck and blew up during the closing phases of Jutland²⁵⁸. There were warships lost to submarine fired torpedoes, but the submarine fired torpedo was not a technology demonstrated during the Russo-Japanese War²⁵⁹. Finally, the use of surface ships as bombardment platforms left much to be desired. These ships were vulnerable to mines and shore gunfire. In a matter of weeks, during the attempt to land at Gallipoli the Allies lost three battleships, had another two badly damaged, and nearly lost a new battlecruiser to these causes.

The resolution of the First World War provided very clear and widely accepted evidence on the direction of most of our variables. As noted, some of our hypotheses, notably those

²⁵⁶ In their role of chasing down raiders the *Invincible* class ships were successful, quickly trapping and destroying Von Spee's squadron in the Battle of the Falkland Islands. However as *ships of the line*, when pitted against slower German battleships speed was no substitute for armor, and three cruisers were destroyed in catastrophic explosions during the Battle of Jutland, including *Invincible* herself. See Commander C. C. Gill, *What Happened at Jutland: The Tactics of the Battle* (George H. Doran Company, 1921); Yates, *Flawed Victory*, (op cit); and Nicholas A. Lambert, “‘Our Bloody Ships’ or ‘Our Bloody System’? Jutland and the Loss of the Battlecruisers, 1916,” *Journal of Military History* 62:1 (January 1998) pages 29-55

²⁵⁷ Fleet tactics also evolved, prior to the First World War, to include the use of screening destroyers as *de rigour* for the battlefleet.

²⁵⁸ Yates, *Flawed Victory*, (op cit). There were a number of surface ships at the Dardanelles whose loss was due to “torpedo”, but this was the old use of torpedo, referring to a mine, not a sea launched self propelled weapon.

²⁵⁹ Gaddis Smith, *Britain's Clandestine Submarines: 1914-1915* (Yale University Press, 1965); Norman Friedman, *US Submarines Through 1945* (Naval Institute Press, 1995)

built around culture and cognitive heuristics, make specific predictions about the effects of World War One on later professional analysis of the Russo-Japanese War.

A Note on Design Bias

While this research design is an effort to test for specific kinds of bias, the reader should also be aware of certain deliberate bias that exists in my approach. This represents a particularly hard case for the pure psychological and psychological-cultural explanations of learning and adjustment, and a correspondingly easy case for the rational choice and the rational bureaucratic politics model²⁶⁰. This situation arises because the circumstances under which the data were produced were broadly favorable to rational choice theories and unfavorable to cognitive theories.

First, the pool of data from which the observers could learn was large. Defenders of the rational choice research program point out that cognitive explanations tend to work best when individuals are asked to apply Bayesian reasoning to very small sets of data. Some grant that in certain conditions Bayesian reasoning may be improperly applied, but over only very small data sets. On larger same sizes the additional information provided overwhelms any cognitive effects which plague small-n inference²⁶¹. The Russo-Japanese War generated a year and a half of naval and ground combat. Land warfare took many different forms,

²⁶⁰ For a discussion of hard and soft cases and their relative utility in different research designs see Harry Eckstein, "Case Study and Theory in Political Science," in Fred Greenstein and Nelson Polsby (editors), *Strategies of Inquiry: The Handbook of Political Science Volume 7* (Addison-Wesley 1975).

²⁶¹ Donald Wittman, "Contrasting Economic and Psychological Analyses of Political Choice: An Economist's Perspective on Why Cognitive Psychology Does Not Explain Democratic Politics," in Monroe *The Economic Approach to Politics* (1991, op cit), page 414.

including sieges, bypass, meeting engagements, attacks on hastily prepared positions, pursuit, counterattacks, cavalry engagements, combined arms engagements, partisan operations, amphibious landings and river crossings. Most countries (and all under examination in this research project) sent multiple observers. Many of the primary source materials were sanitized, published, and translated prior to the First World War. The period of study includes the professional literature generated on the Russo-Japanese War during the decade from the outbreak of the Russo-Japanese War to the beginning of World War One (1904-1914) and the end of World War One to just prior to World War Two (1918-1938). Data scarcity should not preventing individuals from applying rationalist principles in learning endeavors.

Second, military observers are skilled in strategy, operations, and tactics. The uniformly high caliber of observers has already been noted, these were the very best majors, colonels, Navy captains, and junior generals from the observing militaries who were expected to continue to play an important role in the leadership of their respective militaries. Cognitive theories tend to work best when individuals lack familiarity with their subject, undergraduates contemplating insurance schemes or medical students contemplating statistics²⁶². Rational choice theorists argue that subject matter experts will be far less susceptible to cognitive

²⁶² Wittman "Contrasting Economic and Psychological Analyses," (1991 op cit) page 413. However note Schlesinger and Lau (2000, op cit) who note that policy metaphors guide the responses of both experts and novices. Lau and Redlawsk also find that experts may be unjustifiably overconfident, and thus more prone to misestimating probabilities. Richard R. Lau and David P. Redlawsk "Advantages and Disadvantages of Cognitive Heuristics in Political Decision Making," *American Journal of Political Science* 45:4 (October 2001) pages 951-971. While this may be true within the cognitive research program, expertise should not be an inhibitor to learning within the rationalist research program.

factors which may confuse a novice. In this research design we are examining subject matter experts who are rendering expert opinions in their professional field²⁶³.

Third, the stakes for the observers were high. One of the most often cited problems with experimental economics and cognitive psychology empirical tests is that the stakes are extremely low. Experimenters simply don't have the ability to make their subjects make life and death choices, or play for meaningful financial stakes. As Wittman argues in his rationalist critique of the cognitive research program:

[i]f making a mistake involves little cost (e.g. answering a survey question in a cognitive psychology experiment), then little cognition will be employed; if making mistakes involves considerable cost (*e.g. purchasing equipment for the military* [emphasis added]), then more detailed schemata and complicated heuristics will be employed and, more important, more learning, consulting, and division of intellectual labor into cognitively manageable tasks will be undertaken. In a nutshell, the more important the decision, the more likely that the actual decision will approximate the decision that would occur if all relevant information were available and correctly processed. Also, as a general rule, one would expect that the cognitive heuristic chosen to solve a problem would be an unbiased predictor²⁶⁴.

While the officers present as observers were not explicitly acquisition agents, they had input into the recommendation to purchase process in their respective militaries. Furthermore, the individual observer reports were aggregated into the respective official histories, meaning that the views of a single error prone observer could have been de-emphasized.

²⁶³ Civilian observers, such as the reporters who also traveled to the theater of operations (and many of whom were kept in Tokyo during the Manchurian campaign) have far less training, and thus behavior among that group of observers that does not conform with the rational actor model might not be a critical flaw for the rational choice research program.

²⁶⁴ Wittman "Contrasting Economic and Psychological Analyses," (1991 op cit) page 422.

The observers were often tasked with making procurement recommendations (such as preferences for artillery specifications), and the professional literature that followed on the observer reports explicitly took positions on military procurement, while having those reports, as well as civil narratives and the narratives of the protagonists, available as inputs. As, if not more, important, these observers were also responsible for deploying and commanding combat units and writing the doctrine under which units would train and perform²⁶⁵. Military deployment was not an idle abstraction, despite the relatively tranquil period in European history. By 1904-05 clear tensions were emerging among the Great Powers over a number of issues. The use of force had already been threatened in some disputes. While the US had less expectation of Great Power war, they were steadily engaged in a number of smaller wars in the Western hemisphere. Moreover, the discussion of the lessons of the Russo-Japanese War in the context of military planning proceeded through 1914, as tensions in Europe escalated war looked increasingly likely²⁶⁶.

Fourth, while the stakes were high, the stress was low. Psychologists have found that the tendency to rely on heuristics is greater under times of stress, when individuals need to make snap decisions and may be distracted or preoccupied with other matters. In general,

²⁶⁵ Demchak notes that “[a] military is a large, societally important organization for which the consequences of ‘not knowing’ can be extremely costly,” Chris Demchak, *Military Organizations, Complex Machines* (Cornell University Press, 1991) page 4.

²⁶⁶ The changes in international tensions throughout the period of study also, incidentally, serve to partially test Barry Posen’s conjecture that while organizational interest may predict choices during times of low international threat, rational (though not necessarily rational choice) realism imposed by policymakers during times of high threat better explains security behaviors. This research design does not consider policy choices, and so it cannot be a true test of Posen’s thesis. However, if the information streams generated from the professional military are insensitive to threat level this presents problems, though not insurmountable problems, for Posen. Barry R. Posen, *The Sources of Military Doctrine: France, Britain, and Germany Between the World Wars* (1984 Cornell University Press)

increased stress leads to a higher propensity for cognitive defects²⁶⁷. Theories of stress are based primarily on historical studies, as professional ethics prohibit researchers from creating situations that induce severe stress on subjects²⁶⁸. The observers and the professional historians and commentators were able to draw up their narratives in their relative leisure. In the case of Great Britain, the official history was completed *after* the First World War, or more than a decade after the conclusion of hostilities in the Russo-Japanese War. The publications were considered documents, and the products of thoughtful reflection.

Fifth, there was a vibrant specialized international scholarship surrounding the historiography of the Russo-Japanese War. Rational choice critics of cognitive approaches argue that anomalous results from single events are corrected as individuals interact, discuss, and debate the facts surrounding a judgment and divide complex problems into smaller, more specialized and manageable, topics²⁶⁹. It was under precisely these rationality inducing conditions that the data points under analysis were generated. The professional literature was widely translated and subject to professional scrutiny. The German General Staff produced, under von Donat, an authorized English language translation of their study shortly after the German language version appeared²⁷⁰. French officers wrote in English and

²⁶⁷ Ole R. Holsti, "The 1914 Case," *American Political Science Review* 59:2 (June 1965), pages 365-378

²⁶⁸ The famous "obedience to authority" experiments of Stanley Milgram helped social science to establish a set of rules to regulate experimentation on human subjects. See Thomas Blass, *The Man Who Shocked the World: The Life and Legacy of Stanley Milgram* (Basic Books, 2004)

²⁶⁹ Wittman, "Contrasting Economic and Psychological Analyses," (op cit) p 409.

²⁷⁰ German General Staff (Historical Section), Lieutenant Karl von Donat (editor and authorized translator) *The Official History of the Russo-Japanese War* (seven volumes) (Hugh Rees 1906-1913)

published in English and American professional military journals²⁷¹. English language journals also sought out and commissioned translations for other foreign source materials²⁷². All of the official histories and follow on discussions made use of Japanese and Russian material, both original and in translation²⁷³. Much of the professional literature drew on these histories and observations, and engaged in the comparison of the quality of the narrative in the different sources²⁷⁴. The iterative scrutiny by subject matter experts, some of whom directly observed events in Manchuria, others of whom brought different experiences, should ensure that the event data were amalgamated rationally, and that idiosyncratic cognitive failure on the part of one or two observers did not contaminate the entire professional discourse on the subject.

Conclusions

This chapter provided an overview of the military variables that will be our guides in exploring the professional military literature pertaining to the Russo-Japanese War. Many of these variables form the foundation of the more generic “offense defense balance theory”

²⁷¹ Among others see Francois Oscar de Negrier, *Lessons of the Russo-Japanese War* (Hugh Rees, 1906). See the primary source bibliography for a fuller listing.

²⁷² Capitaine Serge Nidvine, “La Cavalerie Russe Pendant la Guerre Russo-Japonaise,” *Journal des Sciences Militaires* (August 1905), translated by Captain Herschel Tupes (September 1905)

²⁷³ The Japanese and Russian histories are not used as sources within this dissertation but do add essential reading to understand the war. Conceivably it would be useful to compare this first hand histories with third party histories to see if our experimental results hold over a different research question. The narrative of the protagonists were made available in official translations, but unofficial translations were also created.

²⁷⁴ See, for example, “A British Officer” (sic) “The Literature of the Russo-Japanese War I,” *The American Historical Review* 16:3 (April 1911) pages 508-528; “The Literature of the Russo-Japanese War II,” *The American Historical Review* 16:4 (July 1911) pages 736-750.

which is one of the major theories used by political scientists to understand the causes of war.

These specific variables provide context to the more general hypotheses pertaining to different models of vicarious learning. The cultural and bureaucratic hypotheses, which draw largely on the unique situations of learning groups, and not on the general predispositions of individuals, are specifically linked into some of these variables. Overall, having a multiplicity of variables allows us to have increased confidence in the results generated from this qualitative analysis of learning.

The next chapters will assess the historical record by drawing on the actual observer reports and the professional literature of the Russo-Japanese War. Each chapter will be organized around a contending research program, and additional background information about the specific circumstances (such as the intricacies Mahanian thought, or the organization of the German cavalry after the Franco-Prussian War) will be presented as appropriate²⁷⁵. The chapters will show which research programs generated hypotheses with empirical support and will note the strength of that empirical support.

²⁷⁵ Discussion of notions such as the influence of the “last war” on each observing military will necessitate some background information on these wars in order to correctly frame the test of the relevant hypothesis.

Chapter 3: The Bayesian Rational Choice Research Program

"I propose to discuss this question, avoiding so far as possible everything tending to cloud the vision with prejudice or bias. When I illustrate from recent facts it is not with the barren and invidious purpose of apportioning blame or praise, but with the single aim of elucidating the truth"²⁷⁶

In this chapter I will assess the explanatory power of the Bayesian approach to learning. The Bayesian approach argues that all individuals will regularly and predictably update their beliefs, or the confidence in their beliefs as new information is made available. Thus individuals, when exposed to the same information stream, are predicted to demonstrate a convergence of beliefs, as possibly different posterior estimates are updated.

The Bayesian approach underpins rational models of learning, and is a critical component to game theoretic and formal models. Bayesian learning allows modelers make predictions about behavior even when the actors within the models are confronted by uncertainty. Erskine Childers' quotation, above, reflects the spirit of the Bayesian approach. New information is used to determine truth, and is predicted to overwhelm any individual bias, prejudice, or interest based agenda.

In the previous chapter I developed a set of three Bayesian hypotheses. These are noted below.

HR1: Multiple individuals behaving in accordance to the predictions of the theorem should very quickly converge on similar beliefs, and confidence in those beliefs, about the underlying phenomenon.

HR2: Individuals will not fixate on specific data, while discarding other event data, from the same information stream.

²⁷⁶ Erskine Childers *War and the Arme Blanche* (Edward Arnold, 1910), p 20

HR3: Individuals will not devote effort to discrediting, or “explaining away,” the event data.

These hypotheses deal with three aspects of Bayesian learning. First, Bayesian learning predicts convergence. Second, Bayesian learning predicts that data are treated equally. Third, Bayesian learning predicts that individuals will make probability estimates based on the weight of the entire stream, and not react to an individual datum.

The Bayesian approach is also the most explicitly time sensitive approach. Bayesian models allow for individuals to begin with vastly different probability estimates, and so initial disagreement does not, in itself, present a problem for a Bayesian model. However, if disagreements persist even after individuals are mutually exposed to a long stream of data, then the Bayesian approach would not seem to be an accurate predictor. Even if the specific data streams are not themselves identical, but are pulled from the same data set, convergence should take place, albeit with a greater delay²⁷⁷.

For the balance of this chapter I will highlight the data drawn from observers and commentators on critical technical, tactical, and strategic aspects of military and naval

²⁷⁷ In a simplistic Bayesian example, observers may be asked to determine the amount of red and blue marbles in an obscured container by randomly drawing marbles, replacing them after the full sample is collected. If all observers based their estimates on the same sequence of drawing, they should all converge. Even if observers drew marbles from the same barrel separately, and were unaware of the draws of others, they should still converge in their estimates of red and blue marbles, if the sample size is large enough. This point is important, as not all observers were in precisely the same spot in the battlefield (or even at the same battles), yet to the extent that there were generalized lessons about the efficacy of specific tactics or armaments, and these were drawn from the two years of war, it should make little difference if, for example, observer A was attached to a regimental headquarters while observer B was attached to centralized Japanese Army staff.

warfare as displayed in the Russo-Japanese War, and test the Bayesian predictions with these data.

Cavalry Tactics in the Russo-Japanese War

This section will examine the degree of Bayesian convergence on matters pertaining to cavalry tactics during the Russo-Japanese War. This will involve a discussion of the overall effectiveness in cavalry during the war; the commentators' suggestions for future cavalry doctrine involving the *arme blanche*, dragoon tactics, or mobile infantry; and the relevance of the Russo-Japanese experience for European cavalry doctrine. A tabulation of the data is shown below. A discussion of results follows.

Chart 3 – 1 Summary of Cavalry Results

Observation						Cavalry Lessons			
Country	Service	Author	Title	Official	Year	Perform	Ground	Pfd Tactic	Applic
France	Infantry	Cordonnier	Japanese in Ma	No	1912	Mixed	Bad	Shock	
France	Gen Staff	de Negrier	Lessons	No	1906	Poor	Good	MI	High
GB	Cavalry	Bird	Lectures	No	1909	Mixed			
GB	Cavalry	Birkbeck	Reports	Yes	1906	Mixed	Bad	Dragoon	Low
GB	Artillery	Burne	Liao Yang	No	1936	Poor	Good		
GB		Childers	Arme Blanche	No	1910	Poor	Good	MI	
GB	Cavalry	French	Cavalry	No	1914		Bad	Shock	Low
GB	Infantry	Hamilton	Reports	Yes	1906	Poor	Good	MI	High
GB	Infantry	Home	Reports	Yes	1906	Poor	Good	MI	
GB	Cavalry	Jardine	Reports	Yes	1906	Mixed	Good	Dragoon	
GB	Infantry	Kearsey	Study of Tactics	No	1935	Poor			Low
GB	Engineer	Nicholson	Reports	Yes	1906	Mixed	Bad	Dragoon	Low
GB	Gen Staff	Robertson	Arme Blanche	No	1910	Poor		MI	High
GB	Artillery	Rowan-Ro	Liao Yang	No	1914	Mixed	Bad	MI	
GB	Artillery	Sedgwick	Campaign	No	1912	Poor	Good		
GB	Artillery	Sedgwick	On Land	No	1906	Poor		MI	
GB	Gen Staff	Smith Dorr	Short Account	No	1925	Poor		MI	High
GB	Staff	Staff	Official History	Yes	various	Poor	Good	MI	
GB	Staff	Staff	Tactical Notes	Yes	1906	Poor		MI	
GB	Artillery	Waters	Reports	Yes	1906	Poor	Good	MI	
GB	Cavalry	Orton	Cavalry Taught	No	1910	Poor		Shock	High
Germany		Asiaticus	Reconnaissance	No	1908	Mixed	Bad	Dragoon	
Germany	Cavalry	Bernhardi	Cavalry	No	1914	Mixed		Dragoon	
Germany	Staff	Staff	Mukden	Yes	1906	Mixed			
USA	Engineer	Judson	Reports	Yes	1907	Poor	Good	MI	High
USA	Engineer	Kuhn	Reports	Yes	1906	Poor	Good	MI	
USA	Cavalry	McClernan	Reports	Yes	1907	Mixed	Bad	Dragoon	Low
USA	Infantry	Reichmanr	Reports	Yes	1906	Mixed	Bad		High
USA	Staff	Schuyler	Reports	Yes	1906	Poor	Good	MI	
USA	Artillery	Wood	Yalu to Port	No	1905	Poor	Bad		Low

Good = 0	Bad = 9	Shock = 3	High = 7
Mixed = 11		Drag = 6	
Poor = 18	Good = 12	MI = 14	Low = 6

Performance: How well did cavalry do in the Russo-Japanese War?

Ground: How amenable was the terrain in the Russo-Japanese War to cavalry operations?

Preferred Tactic: What should be the cavalry's preferred tactic? Shock, Mobile Infantry, Dragoon?

Applicability: How applicable was the Russo-Japanese experience for home country cavalry doctrine?

Tabulation of results for those observations which discussed the cavalry in the Russo-Japanese War

Performance of Cavalry

The performance of the cavalry was universally maligned. Throughout the war, cavalry failed to live up to the expectations of those who favored cavalry action, and confirmed the expectations of those who argued for cavalry's irrelevance to modern warfare.

At the Battle of Liao-yang, where both sides were fully engaged for many days, where the Japanese had 23,000 casualties while the Russians lost 16,000, and where the Russians came very close to inflicting a defeat on the Japanese for want of a counterattack, the performance of the cavalry was subject to withering criticism. Lieutenant Colonel Burne wrote that “in a few sentences the Russian cavalry can be dismissed. Orbeliani²⁷⁸ did nothing. His force suffered five casualties that day. A still more ineffective performance was put up by Mishchenko”²⁷⁹. While Mishchenko was in the critical Manju-yama area, his division

lost its way and wandered off towards the north for nearly three miles before discovering its mistake. In doing so it cut across the front of the 1st Corps and blocked it... [later that evening Mishchenko] again lost his way and eventually halted for the night four miles further north²⁸⁰! His casualties were precisely nil. Kuroki's cavalry was better employed. They were so clean out of it that Kuroki, who hated not to ‘use up’ whatever he had, set them to cook rice for his hard-pressed infantry²⁸¹.

Captain Judson's account of Mishchenko's raid, the largest cavalry action of the war, in January 1905, returns to the same themes of failure. Mishchenko's 7,000 soldiers rode out,

²⁷⁸ Major General Prince Orbeliani, Russian Cavalry Commander.

²⁷⁹ Lieutenant-Colonel A. H. Burne, *The Liao-Yang Campaign* (William Clowes, 1936) page 110.

²⁸⁰ The battle of Liao-yang was being fought to the South of the Russians, so Mishchenko's moves north were away from the battlefield and the Japanese.

²⁸¹ Lieutenant-Colonel A. H. Burne, *The Liao-Yang Campaign* (William Clowes, 1936) page 110-111.

and did not encounter opposition unit Newchwang, where “fifty Jap[anese] in a strong compound defended themselves so strenuously that the Russians departed without taking them”²⁸². Later they were repulsed at the Yingkou railroad station, but attempted to cut the rail links and destroy bridges. “No bridges were destroyed, and repairs were quickly made by the Japanese. On the whole, the Japanese seem to have suffered very little loss or inconvenience from the raid”²⁸³.

Some authors thought that the results of the Russo-Japanese War were more mixed, but they accomplished this mixed result only by severely limiting the tasks asked of cavalry to information gathering, not combat. Almost alone among commentators, Bird argues that Mishchenko’s cavalry raid was a success, but he makes this argument only by limiting the aims of the raid to reconnaissance, rather than an attempt at disrupting Japanese operations. He notes that Kuropatkin deployed “a force of about fifty squadrons, with half a dozen batteries, and a few infantry, all under Mischenko [sic]. The raid ended on January 11th, and was so far successful, that the Russians learnt that no troops of the 3rd Army had reached Liao-Yang”²⁸⁴. Whether the employment of 7,000 men, accompanying horses, supplies, and so forth was worth this piece of information remained a matter of some dispute.

²⁸² William V. Judson report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 3) (US Government Printing Office, 1907) page 160.

²⁸³ William V. Judson report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 3) (US Government Printing Office, 1907) page 161.

²⁸⁴ Brevet-Major W. D. Bird, *Lectures on the Strategy of the Russo-Japanese War* (Hugh Rees, 1911), page 59. One cannot help but wonder at the size of the deployment and the inclusion of the horse artillery, if all that was wanted was some information, and nothing more ambitious.

Some of those writers who spent time addressing cavalry addressed its shortcomings. Many writers, however, merely noted that cavalry was irrelevant, or perpetually unengaged, and then went on. Some passed judgment on this apparent passivity, many others did not. To an extent, many of the sources that refrained from having a discussion of the role of cavalry can be thought of as having a negative opinion of the efficacy of cavalry.

Cavalry Tactics

While the performance of cavalry was criticized, some observers did see an opening for revised cavalry doctrine. They emphasized cavalry's potential effectiveness as mounted infantry, or possibly even in a dragoon role²⁸⁵. As mounted infantry, cavalry would ride to a particular area, and then dismount and fight with the rifle as infantry. Thus the weapons of the *arme blanche* would be disposed of in order to carry a better rifle, and the preponderance of training would be on infantry fighting tactics. This was a controversial position, as some argued that cavalry needed to retain both the weapons and armament of a mounted force.

Captain Carl Reichmann of the US 17th Infantry Division commented on the effectiveness of Japanese cavalry used as mounted infantry, and was bewildered by the Russian cavalry's failings.

It seems that this general²⁸⁶ maintained himself not without great difficulty and was forced to fall back by the dismounted fire of the Japanese force of cavalry that had come on his left rear... I have not been able to learn what the action of the Russian

²⁸⁵ Dragoons fought with the rifle while mounted, whereas mounted infantry dismounted before firing with the rifle.

²⁸⁶ General Aleksandr Gerngross, commanding one of the Russian armies at Wa-Fang-Gou.

cavalry was... If any Russian cavalry was on the left, why were the Japanese cavalry permitted to come in on Gerngross' rear?²⁸⁷.

Reichmann's narrative simultaneously noted the failure of Russian cavalry as a screen and the success of Japanese as mobile infantry.

General deNégrier's assessment of cavalry was blunt. "The Japanese made use of their cavalry in battle in a perfectly logical manner- i.e., they employed it as an arm of the service of which the essential mode of action is rifle-fire, and as a force which can be rapidly moved to any special point where the action is most required"²⁸⁸. In lauding Erskine Childers' *War and the Arme Blanche*, a trenchant critique of cavalry operations in wars prior to 1910, including the Russo-Japanese War, Field Marshal Lord Roberts notes that the cavalry's

role should consist in attacking the enemy 'exactly like the Infantry, and shooting their way up to him'. In this matter of shooting their way up to the enemy, Cavalry possess great advantage owing to their mobility... I submit that in 'Cavalry Training' (1904) the lesson had been learnt, and the Manchurian War has surely confirmed the decisions reached in 1904²⁸⁹.

Rowan-Robinson clearly came down on the side of those who felt cavalry was best employed as mounted infantry, bluntly concluding with the argument that "The cavalry, as

²⁸⁷ Carl Reichmann report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 1) (US Government Printing Office, September 1906) page 200.

²⁸⁸ General Francois Oscar de Négrier, *Lessons of the Russo-Japanese War* translated with permission by E Louis Spiers (Hugh Rees, 1906) page 40

²⁸⁹ Field Marshall Earl Roberts, "Introduction," in Erskine Childers, *War and the Arme Blanche* (Edward Arnold, 1910) page x. Here the "Cavalry Training" Lord Roberts mentions was his tactical revision of the field manual, a culmination of his doctrinal reform efforts while in office as Commander-in-Chief of the British Army. Under Sir John French in 1907 the manual was again rewritten, shifting emphasis back to the offensive shock role of the cavalry.

usual in this campaign, failed to justify its existence... It was not by shock action, but by using the horse as a means of transport to the rifleman that a useful role could be played”²⁹⁰.

Colonel Cordonnier, commander of the French 119th Infantry, and a former lecturer at the French *École Supérieure de Guerre*, argued that the Japanese fear of the Russian *arme blanche* forced them to adopt dismounted tactics, which were inferior to shock tactics.

The Japanese cavalry, convinced of its inferiority with cold steel, did not venture to tackle the Russians, and fell back upon dismounted action. Now, dismounted fighting is not the normal for cavalry, for in it the cavalry is worse than the most medium infantry, while its greatest asset, mobility, is sacrificed²⁹¹.

Childers does seek to defend cavalry, in the bounded role of mobile infantry, but focuses his objection on the obsession with the *arme blanche*. He argues “why should the expression ‘dismounted tactics’ as opposed to ‘mounted tactics’ be always used in reference to the use of the rifle by Cavalry? Does not the common factor of mobility transcend the factor of weapons?”²⁹². Childers countered Cordonnier by noting that the important aspect of mobility was to arrive at the battlefield first. Once under modern fire, tactical mobility was not a useful attribute, as soldiers had to remain covered and concealed while advancing slowly and deliberately. Furthermore, the mounted cavalryman made an easy target for the enemy.

²⁹⁰ Major H. Rowan-Robinson, *The Campaign of Liao-Yang* (Constable & Co., 1914) pages 253-254

²⁹¹ Colonel Emilian Louis Victor Cordonnier, *The Japanese in Manchuria 1904 Volume 1 The Yalu and Te-Li-Ssu* (authorized translation by Captain C F Atkinson) (Hugh Rees 1912) page 216-217

²⁹² Erskine Childers, *War and the Arme Blanche* (Edward Arnold, 1910) page 16

General deNégrier, held a similar opinion about cavalry. He noted that “its real impotence was a matter of amazement”²⁹³. However he goes on to argue that the failure of cavalry was not an indictment of the arm per se, only that it reflected poor Russian ability to integrate artillery, the machine gun, and accurate rifle fire. The reliance on the *arme blanche* as the instrument for shock action doomed the Russians to this level of “impotence”. He argues that “one result of this system was that the Russian cavalry, although vastly superior in numbers, found hardly a single opportunity of charging with either lance or saber. From the beginning of the war, however, hardly a day passed without having to fight on foot”²⁹⁴. Thus for deNégrier the lesson was that mobile infantry could succeed where traditional shock tactics would fail.

Other writers returned to the mounted infantry theme, either attacking it as a bastardization of the cavalry force, or praising it as a way of finding continued relevance for cavalry in an increasingly lethal battlefield²⁹⁵. The nature of these attacks and defense of the cavalry position will be discussed in more detail in the following chapters, but here it is sufficient to simply note the lack of convergence in views.

²⁹³ General Francois Oscar de Négrier, *Lessons of the Russo-Japanese War* translated with permission by E. Louis Spiers (Hugh Rees, 1906) page 10

²⁹⁴ General Francois Oscar de Négrier, *Lessons of the Russo-Japanese War* translated with permission by E. Louis Spiers (Hugh Rees, 1906) pages 13-14

²⁹⁵ Gervase Philips, “Scapegoat Arm: Twentieth Century Cavalry in Anglophone History,” *The Journal of Military History* 71:1 (January 2007) pages 37-74

Suitability of Terrain for Cavalry Action

One of the critical areas where there was a distinct lack of convergence was on the suitability of the Manchurian terrain for cavalry operations. The area of operations including all of Korea and Manchuria east of Liao-yang was mountainous. These mountains gave way to hills, and eventually to a plain around Liao-yang. The plain continued north to Mukden, where it was again flanked by mountains to the east. During the summer months the land, while not wooded, was covered with a particular native millet, known as Kau-liang. This crop, when fully grown, was over eight feet tall, had a thick stalk, and grew in dense rows. The terrain, and, especially, the Kau-liang fixated some observers and commentators, who held that it made effective cavalry operations impossible.

In the only book length analysis of cavalry within the Russo-Japanese War, a German officer writing under the name “Asiaticus” noted the admixture of cavalry with infantry, and commented that “in this country, so little favourable for the employment of cavalry, small detachments composed of infantry and cavalry were often used”²⁹⁶. In explaining the overall unimpressive results obtained by cavalry on both sides, Asiaticus concludes that

Cossacks concealed their indifferent training by resort to the carbine, the Japanese always sought to hold their superior numbers at bay by means of the same weapon... Shock action was only employed in small bodies, and never with decisive success. The ultimate decision was always fought out with the carbine... Difficult country, climatic conditions, indifferent training, and numerical weakness (Japanese) stood in the way of the use of cavalry during battle²⁹⁷.

²⁹⁶ “Asiaticus” [sic] *Reconnaissance in the Russo-Japanese War* (translated from German by J. Montgomery, 3rd Hussars) (Hugh Rees, 1908) page 37

²⁹⁷ “Asiaticus” [sic] *Reconnaissance in the Russo-Japanese War* (translated from German by J. Montgomery, 3rd Hussars) (Hugh Rees, 1908) page 138.

In a revision of a book that he had penned earlier²⁹⁸, German theorist General Friedrich von Bernhardi addressed the lessons of the war for a European audience. “The wars in South Africa and Manchuria, on the other hand, reveal conditions which have very little in common with those of a European war such as the German cavalry will have to fight. Nowhere can the few experiences of cavalry action gained in these wars be immediately applied”²⁹⁹. Von Bernhardi does, however, not explain what these critical differences were, or how they disqualified the Manchurian (or South African) examples. Indeed, he goes on to argue in favor of a form of Cavalry doctrine that wholly theoretical, as he allows that older Franco-Prussian, US Civil, and Napoleonic wars had been superseded by new technologies, and the more recent experiences in Manchuria and South Africa were inapplicable. His entire theory is explicitly and entirely bereft of empirical support.

On the other side of the issue were a number of officers and writers that argued that Manchuria was a very good test for cavalry. Major Joseph Kuhn, of the US Army Corps of Engineers, was of the opinion that Manchuria was “a country eminently adapted to cavalry movements”³⁰⁰. Erskine Childers analyzed the Russo-Japanese War and other modern wars

²⁹⁸ Bernhardi’s original book was *Cavalry in War and Peace*. This was collapsed into a single volume and republished simply as *Cavalry* in 1914. Both versions were translated into English. The 1914 edition included a preface by Sir John French, then commanding the British Expeditionary Force (BEF) fighting in Europe. Bernhardi was a cavalry officer, and actually rode a unit through the *Arc de Triomphe* following the Prussian defeat of France in the Franco-Prussian War. He penned a number of books dealing with the inevitability and likely conduct of a general war in Europe.

²⁹⁹ General Friedrich von Bernhardi, *Cavalry* (translated by Major G. T. M. Bridges, edited by A. Hilliard) (George H. Doran Company, 1914), page 28.

³⁰⁰ Joseph Kuhn report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 2) (US Government Printing Office, 1906) page 22.

in his *War and the Arme Blanche*, which attacked modern cavalry doctrine³⁰¹. He argued that “Much of the terrain [in Manchuria] was even better than South Africa for shock tactics. Though from the Yalu to Liao-yang the campaign was fought in a mountainous area, from the Tai-tse-ho northward vast open plains, unfenced, unobstructed... were the rule. What happened? No shock”³⁰². Childers went on to blast the performance of cavalry during the war, and argue for a revision of British doctrine. Like numerous other commentators Sedgwick despairs of the use of cavalry, though he does not find excuse in the terrain. “Russian cavalry was singularly useless. The topographical features of the western part of the battlefield, the great level plain of the Liao river, are an ideal terrain for cavalry. This plain appears to have been well suited to the combined action of fire and shock tactics”³⁰³.

According to deNégrier, what transformed Mukden from a reverse to a defeat was a Japanese breakthrough between the armies of Kaulbars and Bilderling during the retreat. This breakthrough, however, was neither assisted nor exploited by cavalry. Instead “a Japanese detachment provided with artillery dashed through it towards the north and opened fire upon the rear of Kaulbars’ troops while they were facing west. This was what caused the disaster. It was here that the greater part of the 40,000 prisoners were taken”³⁰⁴. Even in

³⁰¹ Childers served as a volunteer during the Boer War, but was no longer enlisted when he wrote his book. The book includes a lengthy and laudatory “Forward” by retired Field Marshall Lord Roberts, former Commander-in-Chief of the British Army. This imprint of legitimacy granted by the “Forward” made the book an important factor in prewar British military circles, and thus it is included here. Childers would go on to become involved in the Irish Republican movement and was later executed. He is the father of Erskine Hamilton Childers, president of Ireland 1973-74.

³⁰² Erskine Childers, *War and the Arme Blanche* (Edward Arnold, 1910) page 328.

³⁰³ Captain F. R. Sedgwick, *The Campaign in Manchuria, 1904 to 1905: Second Period- The Decisive Battles 22nd August to 17th October 1904* (George Allen & Company, Ltd, 1912) page 319.

³⁰⁴ General Francois Oscar de Négrier, *Lessons of the Russo-Japanese War* translated with permission by E Louis Spiers (Hugh Rees, 1906) page 38.

good ground, in a pursuit role against a beaten foe, doing something which cavalry supporters felt was one of the critical remaining missions available for cavalry action, cavalry failed to make a mark.

Summary : Cavalry Tactics in the Russo-Japanese War

All observers agreed that cavalry performance during the war was not very effective. At best it contributed to improved intelligence gathering for the Japanese, but it was not effective in raiding, in charging, or even in exploiting openings for penetration. However, even on points of fact there were differences in the views of observers and commentators. The critical area of divergence was the suitability of the ground for mounted action. Some writers felt that the ground prevented mounted action, while others felt that the ground was adequate, and even advantageous, for the practicing of mounted attack.

The lessons drawn were contradictory. Some argued that that the experiences in Manchuria proved that the use of the *arme blanche* in a charge was obsolete, but that there would still be a role for mobile infantry, especially if stiffened with machine guns. Some argued that, between the extremes of the *arme blanche* and the mobile infantry was an opening for a dragoon, and that dragoon tactics may be applicable. Others argued that Manchuria was not a good test case for cavalry due to the terrain, the poor quality of the Cossacks, and the small numbers of the Japanese, and so no lessons could be drawn.

Artillery Tactics in the Russo-Japanese War

This section will examine the degree of Bayesian convergence on matters pertaining to artillery tactics during the Russo-Japanese War. This will involve a discussion of the overall effectiveness in artillery during the war; the commentators' suggestions for future artillery positioning and firing doctrine, and the relevance of the Russo-Japanese experience for European artillery doctrine. A tabulation of the data is shown below. A discussion of results follows.

Chart 3 – 2 Summary of Artillery Results

Observation						Artillery Lesson	
Country	Service	Author	Title	Official	Year	Effect	Tactic
France	Infantry	Cordonnier	Japanese i	No	1912	Supress	Indirect
France	Gen Staff	de Negrier	Lessons	No	1906	Destroy	Indirect
GB	Marine	Aston	Amphib	No	1920	Destroy	
GB		Footslogge	Short Acco	No	1925	Supress	Indirect
GB	Infantry	Hamilton	Reports	Yes	1906	Supress	Indirect
GB	Infantry	Home	Reports	Yes	1906	Supress	Indirect
GB	Artillery	Hume	Reports	Yes	1906	Supress	Indirect
GB	Gen Staff	Ian Hamito	Liao Yang	No	1936	Supress	Indirect
GB	Engineer	Nicholson	Reports	Yes	1906	Destroy	Indirect
GB	Artillery	Rowan-Rol	Liao Yang	No	1914		Indirect
GB	Artillery	Sedgwick	Campaign	No	1912		Indirect
GB	Artillery	Sedgwick	On Land	No	1906	Supress	Indirect
GB	Staff	Staff	Kearsey	No	1935	Supress	Indirect
GB	Staff	Staff	Official His	Yes	various	Supress	Indirect
GB	Staff	Staff	Tactical No	Yes	1906	Supress	Indirect
GB	Artillery	Vincent	Reports	Yes	1906	Supress	Indirect
GB	Artillery	Waters	Reports	Yes	1906	Supress	Indirect
Germany	Gen Staff	Caemmere	Mukden	Yes	1906		Indirect
Germany	Artillery	Von Teil	Activity of F	No	1913		Either
Germany	Staff	Staff	Mukden	Yes	1906	Supress	Indirect
Germany	Staff	Staff	Liao Yan	Yes	1913	Supress	Indirect
Germany	Staff	Staff	Ya-Lu	Yes	1913		Indirect
Germany	Staff	Staff	Wa Fan G	Yes	1913		Indirect
Germany	Staff	Staff	The Scha-l	Yes	1913		Indirect
Germany	Staff	Staff	San de Pu	Yes	1913		Indirect
USA	Engineer	Kuhn	Reports	Yes	1906	Supress	Indirect
USA	Artillery	March	Reports	Yes	1906	Supress	Indirect
USA	Cavalry	McClernan	Reports	Yes	1907	Shock	Indirect
USA	Infantry	Morrison	Reports	Yes	1906	Destroy	Indirect
USA	Infantry	Reichmanr	Reports	Yes	1906	Supress	Indirect
USA	Staff	Schuyler	Reports	Yes	1906		Indirect
USA	Gen Staff	Staff	Epitome	Yes	1907		Indirect
USA	Artillery	Wood	Yalu to Por	No	1905	Supress	Indirect

Sup = 18	Ind = 31
Shock = 1	Either = 1
Dest = 4	Direct = 0

Fire Effect: Suppress, Destroy, or Shock?

Fire Tactic: Indirect or Direct Fire?

Tactics of Artillery Targeting

A clear piece of confirmatory evidence for the Bayesian approach is obtained by looking at the targeting of artillery. Nearly all observers who commented on the matter noted the superiority of indirect fire to direct fire³⁰⁵. While indirect fire involved higher rates of ammunition consumption, due to the difficulties of spotting fire; and involved more complex command and control needs³⁰⁶, there were few advocating direct fire on the basis of the Russo-Japanese War after 1905³⁰⁷.

Early in the war observers were treated to a comparative study of artillery targeting. The Russians used direct fire, but very quickly changed to indirect fire after suffering losses from the fire of inferior Japanese guns and howitzers. Colonel Tulloch, of the British Indian Army, argued that once the Russians shifted to indirect artillery fire the cost of Japanese attack became much higher. In comparing Liao-yang to earlier Russian defenses he commented that

the Russians abandoned their prepared artillery positions in favour of placing their guns behind the hills and employing indirect fire. The introduction of this change had a very marked effect. The Japanese searched in vain for the Russian guns, and failing to find them, resorted to an infantry advance without full artillery preparation, with the result that they were checked during daylight, and suffered heavily from shrapnel fire³⁰⁸.

³⁰⁵ Von Teil, who is an outlier, argues that indirect fire is preferred, but some circumstances may call for direct fire, in which case artillery needs to be prepared for direct firing, and should expect to receive losses.

³⁰⁶ Some observers commented on the need for improved field telephones Great Britain Committee of the Imperial Defence (Historical Section) *Official History (Naval and Military) of the Russo-Japanese War Volume 1: To August 1904* (His Majesty's Stationary Office 1910).

³⁰⁷ The British, German, and American all shifted to indirect fire. Only the French retained a direct fire doctrine. Robert M. Ripberger, "The Development of the French Artillery for the Offensive 1890-1914," *The Journal of Military History* 59:4 (October 1995) pages 599-618.

³⁰⁸ Tulloch, "Russian Defence Works, from Nanshan to Liao-yang", undated and received October 1904, page 184. Great Britain General Staff: War Office *The Russo-Japanese War: Reports from British*

In his analysis of the campaign, and especially the role of long range artillery fire, deNégrier stressed one aspect of the modern system, cover and concealment- and more pointedly, concealment.

Invisibility has become an essential condition. This is the dominant factor of the whole war. So long as batteries were allowed to be located... they were reduced to such a condition as rendered it impossible to retire them from the field. Epaulements, whenever visible, were insufficient to prevent the batteries from being at once silenced³⁰⁹.

Note that this invisibility infers the use of indirect fire, for lines of sight are reciprocal.

Like other commentators, Major Rowan-Robinson concedes that Japanese artillery was, *ceteris paribus*, inferior to the Russian guns. However, he argues that it was better trained in indirect fire, and this provided an advantage especially in the early phases of the war.

Two Russian batteries open fire in succession and, for the first time, draw reply from the Japanese guns and howitzers, by which they are successively and quickly silenced, one gun being disabled. The howitzers are so well concealed that the Russians believe them to be firing from Wi-ju, and do not discover their error until the publication of the British accounts of the battle³¹⁰.

The importance of choosing ground and concealing carefully, a hallmark of the modern tactical system, is highlighted in Rowan-Robinson. "A horse battery of Akiyama's, concealed in the kao-liang, enfilades and completely silences one Russian battery and puts all the officers in the group out of action. The effect of this one cleverly handled battery is greater,

Officers Attached to the Japanese and Russian Forces in the Field **Marked Confidential** (volume one, no publisher, 1905).

³⁰⁹ General Francois Oscar de Négrier, *Lessons of the Russo-Japanese War* translated with permission by E Louis Spiers (Hugh Rees, 1906) page 43

³¹⁰ Major H. Rowan-Robinson, *The Campaign of Liao-Yang* (Constable & Co., 1914) page 47

in fact, than that of the two hundred guns which are launching a tornado of fire at Stackelberg's gallant troops"³¹¹

Artillery Targeting and Shell Type

The choice of suppressive or destructive missions for artillery dictates, to a large extent, the kind of shell used in the barrage. Shrapnel, which explodes and distributes round balls, or later jagged pieces of metal across a wide area, is good for killing exposed men or forcing those men to take cover. Against covered targets it rapidly loses its effectiveness. High-explosive shell, however, is effective in destroying things such as walls, berms, wire entanglements, and fortifications (up to a point). Modern high explosive shell also splinters, yet the 1904 high explosive shell was far more limited in the area over which it may cause damage by splintering. Thus the suppressive value of the 1904 high explosive round was far less than the 1904 era shrapnel shell³¹².

The British studies came down clearly on the value of artillery in a suppressive role. Once the observer reports were gathered, in 1906 War Office released a confidential official pamphlet entitled *Some Tactical Notes on the Russo-Japanese War*³¹³. This twenty-nine page document was the PowerPoint™ presentation of its day, synthesizing the three volumes of observer reports fourteen years before the official history was completed. In a section

³¹¹ Major H. Rowan-Robinson, *The Campaign of Liao-Yang (op cit)* page 214

³¹² Jonathan B. A. Bailey, *Field Artillery and Firepower* (Military Press/ Taylor and Francis, 1989).

³¹³ This preceded the release of the first volumes of the first attempt at a confidential history by three years, and preceded the general release of the observer reports by two years.

entitled “Co-operation Between Artillery and Infantry in the Attack”, which was separate from sections on infantry and artillery, the document noted that the

effect of artillery support in inducing defenders to keep their heads down and to shake their aim was found to be of such great assistance to the infantry that at the request of the infantry themselves the Japanese artillery as a rule continued their fire on the Russian trenches, regardless of any small damage they might inflict on their own infantry, until the trenches were taken... The Japanese consider that any losses that their guns may cause their own infantry are small compared by those they would incur were the defenders left free at the critical moment to pour an accurate and concentrated fire on the attacking infantry at a distance of only a few hundred yards³¹⁴

Major Home, of the Gurkhas, explicitly addressed the tradeoff between suppression and destruction, noting the importance of the former. He argued that when subject to a rapid shrapnel barrage the enemy troops will be in a situation where “if they attempt any movement their destruction will be certain”³¹⁵. Moreover, on witnessing Japanese artillery fire in support of an infantry assault he argued that

some of the military attachés thought that the Japanese wasted ammunition, and that the results did not justify the expenditure. This view of the case, however, did not commend itself to me, as I am convinced that the comparatively small losses of the Japanese [infantry] were largely due to this distribution of fire, and so long as they were able to keep up the supply [of ammunition for the artillery] the result obtained, viz., of preventing the Russians from shooting at their advancing infantry, fully justified their expenditure³¹⁶.

³¹⁴ Great Britain General Staff: War Office *Some Tactical Notes on the Russo Japanese War* pamphlet Marked **Confidential**, copy issued to “Captain Wickham” (no publisher, 1 March 1906) page 19.

³¹⁵ Home “General Report on the Russo-Japanese War up to the 15th August 1904” November 1904, Great Britain Committee of the Imperial Defence (Historical Section) *The Russo-Japanese War: Reports from British Officers Attached to the Japanese and Russian Forces in the Field* (volume three, His Majesty’s Stationary Office, 1908) page 216.

³¹⁶ Home “General Report on the Russo-Japanese War up to the 15th August 1904” November 1904, Great Britain Committee of the Imperial Defence (Historical Section) *The Russo-Japanese War: Reports from British Officers Attached to the Japanese and Russian Forces in the Field* (volume three, His Majesty’s Stationary Office, 1908) page 217.

Lieutenant-Colonel Edward McClernand, from the US First Cavalry Division, concurred, and added further explanation about the suppressive role of the machine gun as the close support point suppression weapon to complement long range suppressive artillery support.

The Japanese expected to largely limit the use of the machine gun to the defensive, but experience soon taught them to widen its field, and later it was frequently used on the offensive. Their rapid fire frequently silenced the fire of the Russian infantry, and caused the latter to crouch down in their trenches. When the guns stopped firing the Russians could be seen again popping their heads above the parapet³¹⁷

Major Kuhn, from the US Army Corps of Engineers, was specifically interested in fortifications. He noted that the Russians had a superior gun and, later in the war, good numbers and an efficient ammunition distribution system. However

in one particular only did the Japanese artillery possess an advantage, and that was in the matter of a high-explosive shell, of which the Russians had none, or, if they did, never fired any to my knowledge. This advantage turned out to have been a most important one and went far toward maintaining a balance in the artillery equipment of the belligerents. The Russians being nearly always on the defensive and occupying fixed lines with artificial cover or natural cover, the high-explosive shells found frequent illustration, both at Port Arthur and in the field battles³¹⁸.

Captain Vincent, of the Royal Artillery, noted that the Russians were hamstrung by their lack of high-explosive ordnance, especially in their attempts to delay Japanese river crossings. “In fact, not a single one of the many bridges constructed by the Japanese in the Yalu basin was destroyed, or even damaged by Russian artillery fire”³¹⁹

³¹⁷ Edward J. McClernand report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 3) (US Government Printing Office, 1907) page 95.

³¹⁸ Joseph Kuhn report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 2) (US Government Printing Office, 1906) page 31.

³¹⁹ Vincent report “Artillery at the Battle of the Yalu”, undated but forwarded by Ian-Hamilton on 5 June 1904, Great Britain General Staff: War Office *The Russo-Japanese War: Reports from British Officers Attached to the Japanese and Russian Forces in the Field* **Marked Confidential** (volume one, no publisher, 1905) page 72.

In his classified comments on Lieutenant-General Ian Hamilton's report on the Battle of the Yalu, Lieutenant-General Sir William Nicholson questioned Ian Hamilton's support for conclusion on the value of artillery, pointedly asking

it is stated that the Japanese claim their artillery fire to have been so deadly that the Russians could not hold their heads up. This may have been the case, but it would be instructive to know what proportions of casualties on each side was due to shrapnel, and what to bullets. Lieut.-Colonel Hume [in another report] remarks that Russian casualties from artillery fire are not reported to be very numerous³²⁰.

However, Captain Vincent, an observer from the Royal Artillery, argued that the conditions of suppression and low shrapnel casualties could simultaneously obtain.

As the Japanese firing line reached the Ai-ho, a heavy rifle fire was opened upon them from the trenches along the foot of the hills. The whole of the Japanese field artillery fire was then directed on these trenches and helped considerably to keep down the fire... The Japanese claim that it was due to the intensity and accuracy of their shrapnel fire on the Russian trenches, that their infantry were enabled to advance over the bare open... with comparatively little loss. At the same time it is stated that a very small proportion of the wounded Russian prisoners had been hit by shrapnel³²¹.

Lieutenant Colonel Hume, observing the Japanese artillery, commented on the same effects of Russian shrapnel on Japanese guns. "When a Japanese battery is being really smothered with shrapnel, the men take cover, emerging again to fight their guns directly an opportunity presents itself [*sic*]; but if the occasion demands it the service of the guns is carried on

³²⁰ Lieutenant-General Sir William Nicholson, comments on Ian-Hamilton report on the "Battle of the Yalu, 30 April- 1 May 1904), Great Britain General Staff: War Office *The Russo-Japanese War: Reports from British Officers Attached to the Japanese and Russian Forces in the Field* **Marked Confidential** (volume one, no publisher, 1905) page 34.

³²¹ Vincent report "Artillery at the Battle of the Yalu", undated but forwarded by Ian-Hamilton on 5 June 1904, Great Britain General Staff: War Office *The Russo-Japanese War: Reports from British Officers Attached to the Japanese and Russian Forces in the Field* **Marked Confidential** (volume one, no publisher, 1905) pages 76-77. Note that by basing the statistics on wounded prisoners Vincent is underreporting if one believes that being subject to shrapnel wounding is more lethal than rifle fire.

between the bouquets of shrapnel”³²². Thus casualties inflicted on Japanese gunners subject to properly ranged shrapnel were light, but the rate of fire and effectiveness of the guns were hampered. When the observers examined casualty rates they concluded that suppressive fire was relatively ineffective. When they examined overall effects, they discovered that suppression in conjunction with infantry attack could be effective, but that the “credit” for the casualty statistics would accrue to the infantry.

Summary: Artillery in the Russo-Japanese War

The Bayesian model explains the patterns of some of the lessons drawn from artillery fire. There was wide agreement that the lessons from the Russo-Japanese War were applicable to modern warfare. There was a unanimous consensus that artillery should employ indirect fire whenever possible, regardless of the command and control problems that this may entail. Indeed, as a follow-on many observers suggested that their own militaries should investigate potential mitigations for these problems. There was recognition that the Japanese mountain and pack artillery was useful, and some speculation that light mortars would be useful. In all these cases there was either spoken agreement or no stated position taken in the reports and commentaries, effectively presenting a unanimous front, fully consistent with the Bayesian prediction of convergence in beliefs or confidence in beliefs. Moreover, while some observers saw in these lessons continuity with their own preëxisting beliefs, others recognized that these lessons were new, suggesting that beliefs, or confidence in those beliefs, had been changed as data from the Russo-Japanese War were evaluated.

³²² Hume, “Field Artillery”, 27 October 1904, Great Britain General Staff: War Office *The Russo-Japanese War: Reports from British Officers Attached to the Japanese and Russian Forces in the Field* **Marked Confidential** (volume one, no publisher, 1905) page 373

The consensus broke down, however, on the issue of artillery targeting and its corollary, shell type. Observers were split on whether the power of artillery was better spent on suppressing and pinning the enemy, or on destroying the enemy outright. Destructive fire required high-explosive shells, while suppression could be accomplished with shrapnel. If the goal was destruction, then modern artillery was still inadequate. If the goal was merely suppression, then modern artillery seemed to be performing well. This debate revolved around a discussion of casualties. Those looking for destructive applications looked at destructive effects, including the numbers of dead and wounded. Those looking at suppressive applications argued that the evidence of successful suppression would not show up directly in casualty statistics, but would instead be demonstrated by a study of the field operations. The fact that nearly two years of bloody warfare left observers and commentators with such divergent views is not consistent with the Bayesian predictions.

The question of choosing appropriate metrics was evident in the notes of Captain John Morrison, of the United States Army's 20th Infantry Division. Morrison discusses artillery and argues that "a large amount of ammunition was fired by these guns, but it is exceedingly doubtful if the effect was commensurate with the cost"³²³. He reproduces the following chart:

³²³ John Morrison report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 1) (US Government Printing Office, September 1906) page 83.

Chart 3 – 3 Morrison’s Analysis of Japanese Casualties³²⁴

	Per cent.
Japanese casualties from infantry fire	91.35
Japanese casualties from artillery fire	7.99
Japanese casualties from bayonet, saber, etc66

Total	100.00

It displays reported Japanese casualties by various sources, as collected from Japanese field hospitals. Such metrics were, however, open to attack on two substantive grounds. First, field hospitals mostly dealt with soldiers who were brought in alive. Soldiers that were obviously dead in battle were often simply collected for burial. Given the horrific nature of artillery fire on the human body, many casualties from artillery would not have been brought into hospital, but were simply buried, or as Captain Vincent puts it in his write up of shrapnel for the British General Staff “the proportion of killed to wounded is greater with the shell than with rifle bullets”³²⁵.

Second, suppressive artillery fire’s purpose is keeping the enemy immobilized and unable to effectively fire their own weapons, and thus effective suppressive fire would not necessary result in higher casualties from artillery fire. Instead it would result in higher casualties (or numbers of prisoners of war) from other forms of lethal force which administer the *coup de*

³²⁴ John Morrison report (op cit) page 83.

³²⁵ See for example, the report of Major Joseph Kuhn, US Army Corps of Engineers, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 2) (US Government Printing Office, 1906), page 35; and Captain Vincent, Royal Artillery, “Report on Field Artillery”, 20 October 1904, Great Britain General Staff: War Office *The Russo-Japanese War: Reports from British Officers Attached to the Japanese and Russian Forces in the Field* **Marked Confidential** (volume one, no publisher, 1905) page 389.

grace upon the immobilized units³²⁶. Morrison himself records, but does not recognize, the power of this argument. During a Russian retreat Russian artillery fired on the vacated ground, “and the Japanese immediately abandoned the crest, allowing the defeated Russians to retire in safety. Shrapnel fire made many places absolutely impassable”³²⁷. Thus, while there may have been agreement about the measurement of specific metrics, there remained a fundamental disagreement about the utility of these metrics for drawing specific conclusions about the effectiveness of artillery.

Conduct of the Offensive in the Russo-Japanese War

The previous discussions on cavalry and artillery centered on the performance of specific arms in battle. At a broader level, however, there existed a question about factors conducive to the conduct of offensive operations. This is at the heart of offense-defense theory, and it is on this level that Biddle developed his “modern system” of military combat. In this section I will examine four elements relating to the conduct of the offensive as they were demonstrated and discussed in the Russo-Japanese War. These four aspects are rates of ammunition consumption, the effectiveness of hasty entrenchments, the rapidity of movement after battle, and the maintenance of pre-World War German infantry assault tactics. I will demonstrate that the Bayesian predictions of convergence do not obtain for all

³²⁶ Home “General Report on the Russo-Japanese War up to the 15th August 1904” November 1904, Great Britain Committee of the Imperial Defence (Historical Section) *The Russo-Japanese War: Reports from British Officers Attached to the Japanese and Russian Forces in the Field* (volume three, His Majesty’s Stationary Office, 1908) page 216.

³²⁷ John Morrison report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 1) (US Government Printing Office, September 1906) page 84.

of these factors. While there is widespread agreement about ammunition consumption and hasty entrenchments, there is disagreement about rapidity of movement and infantry assault tactics. The results are summarized below.

Chart 3 – 4 Summary of Infantry Results

Observation						Infantry Assault Lessons			
Country	Service	Author	Title	Official	Year	Hasty Entrench	Ammo Consume	Slow Justified	Formation
France	Infantry	Cordonnier	Japanese i	No	1912		Yes	No	
France	Gen Staff	de Negrier	Lessons	No	1906	Yes	Yes	No	Adjusted
GB	Marine	Aston	Amphib	No	1920				
GB	Engineer	Bannerman	Reports	Yes	1906	Yes		Yes	Adjusted
GB	Infantry	Bird	Lectures	No	1909		Yes	Yes	
GB	Artillery	Burne	Liao Yang	No	1936		Yes		Adjusted
GB		Childers	Arme Blanc	No	1910	Yes			
GB		Footsloggers	Short Acco	No	1925		Yes		Adjusted
GB	Intelligence	Haldane	Reports	Yes	1906		Yes		Adjusted
GB	Infantry	Hamilton	Reports	Yes	1906	Yes	Yes	Yes	Adjusted
GB	Infantry	Home	Reports	Yes	1906	Yes	Yes		German
GB	Artillery	Hume	Reports	Yes	1906		Yes	Yes	
GB	Cavalry	Jardine	Reports	Yes	1906		Yes		Adjusted
GB	Engineer	Nicholson	Reports	Yes	1906	Yes	Yes	Yes	
GB	Artillery	Rowan-Ro	Liao Yang	No	1914	Yes	Yes	No	German
GB	Artillery	Sedgwick	Campaign	No	1912	Yes	Yes		
GB	Artillery	Sedgwick	On Land	No	1906		Yes	Yes	Adjusted
GB	Gen Staff	Smith Dorr	Short Acco	No	1925				Adjusted
GB	Staff	Staff	Kearsey	No	1935	Yes	Yes	Yes	Adjusted
GB	Staff	Staff	Official His	Yes	various	Yes	Yes	Yes	Adjusted
GB	Staff	Staff	Tactical No	Yes	1906	Yes	Yes		Adjusted
GB	Artillery	Waters	Reports	Yes	1906	Yes		Yes	Adjusted
Germany		Asiaticus	Reconnais	No	1908			No	
Germany	Gen Staff	Caemmere	Mukden	Yes	1906			No	German
Germany	Gen Staff	Hoffmann	Lost Oppor	No					German
Germany	Staff	Staff	Mukden	Yes	1906		Yes	No	German
Germany	Staff	Staff	Liao Yan	Yes			Yes		German
Germany	Staff	Staff	Ya-Lu	Yes				No	German
Germany	Staff	Staff	Wa Fan G	Yes			Yes		German
Germany	Staff	Staff	San de Pu	Yes	1913	Yes		No	German
USA	Cavalry	Ingram	Use of Cav	No	1931			No	
USA	Engineer	Judson	Reports	Yes	1907	Yes	Yes	Yes	
USA	Engineer	Kuhn	Reports	Yes	1906	Yes		Yes	
USA	Artillery	March	Reports	Yes	1906		Yes		Adjusted
USA	Cavalry	McClernan	Reports	Yes	1907		Yes	No	Adjusted
USA	Infantry	Morrison	Reports	Yes	1906	Yes	Yes	No	Adjusted
USA	Infantry	Reichmanr	Reports	Yes	1906		Yes	Yes	
USA	Artillery	Wood	Yalu to Por	No	1905	Yes	Yes	Yes	Adjusted

Yes = 17	Yes = 26	Yes = 13	Adj = 17
No = 0	No = 0	No = 11	Ger = 9

Were hasty entrenchments effective in slowing and/or complicating attack?

Was ammunition consumption unexpectedly high?

Were the slow rates of advance of the Japanese armies justified?

Did the attack formation follow the German model, or did it adjust during the war?

Ammunition Consumption

During the Russo-Japanese War rates of ammunition consumption reached unprecedented heights. Individual soldiers, using magazine weapons and being engaged for battles that ran through the course of days, depleted their personal stores of ammunition quickly. Artillery, using indirect fire (which required more ranging shots) and firing for suppressive effects, expended vast quantities of munitions. In some cases artillery fired off more rounds in single battles, such as Liao-yang and Mukden, than they had been allotted for the entire campaign. In at least one instance one side ran out of ammunition, and thus artillery fire stopped³²⁸. The question is not whether there was high ammunition consumption, as most militaries entered the Russo-Japanese War expecting that consumption rates would be higher than they had been in previous wars, but whether those consumption rates were surprisingly high. Almost uniformly the answer was affirmative.

In his discussion of Nan-shan, Rowan-Robinson argued that the costs of the Japanese attack, and the eventual Japanese victory was due to the Russian artillery, which had held off the Japanese for most of the day, expending its ammunition, at the unheard of rate of 160 rounds per gun³²⁹. On the question of ammunition consumption, Sedgwick argued that the world had fundamentally changed. “Among the most important things which one notices that hardly come under the head of technical training, are the difficulty of supplying QF

³²⁸ The Russian batteries at Nan-shan ceased firing before the line was eventually turned by Japanese assault. They had fired steadily throughout the day but were not resupplied, as Fock, the senior Russian General in Port Arthur, was reluctant to send supplies out of the fort. See Major H Rowan-Robinson, *The Campaign of Liao-Yang* (Constable & Co., 1914) pages 72-73.

³²⁹ Major H. Rowan-Robinson, *The Campaign of Liao-Yang* (Constable & Co., 1914) pages 14-15.

³²⁹ Major H. Rowan-Robinson, *The Campaign of Liao-Yang* (*op cit*) page 72-73.

[quick-firing] guns with ammunition in a battle several days' duration; the fact that battles are of several days' duration, and that the men must go into action prepared for this"³³⁰. Unprecedented rates of ammunition consumption were noted by Lieutenant-Colonel Walter S. Schuyler of the US Army General Staff. "On July 24, the day of the Japanese assault, it was officially reported that one Russian battery fired the incredible number of 4,800 rounds in the 8-gun battery, the allowance for the campaign being 600 rounds per gun. This and several similar experiences led to a general order from the commander in chief directing economy of ammunition"³³¹. The only difference among the observers on ammunition rates of fire was between those who simply noted the high volume and those who appended comments indicating some form of surprise³³².

Hasty Entrenchment

The Russo-Japanese War saw a number of improvised hasty entrenchments in the field. Unlike the fixed fortifications, which many observers expected to require time consuming siege, these improvisations ranged from the shallow foxhole to more elaborate trenches and obstacles, many times constructed under fire. These entrenchments were not just developed by the defense. On the offense too there was increased reliance on the time consuming

³³⁰ Captain F. R. Sedgwick, *The Russo-Japanese War on Land: A Brief Account of the Strategy and Major Tactics of the War* (Foster Groom & Co, 1906) page 156.

³³¹ Walter Schuyler report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 1) (US Government Printing Office, September 1906) page 114.

³³² The implications of such rates of fire, however, did produce a variety of results. Some argued that these figures indicated that war had fundamentally changed, and would henceforth require vast quantities of ammunition. Others argued that such rates were the result of mechanical advances only, and that in future officers would have to take care to ensure that such expenditures on the part of their men were held in check.

construction of trenches and artificial cover to mask the attacking forces from defending fire until the last possible instant. While some observers were surprised by these developments, most noted their success, and none disputed their probable influence on future conflict. While they could be overcome, to do so required time consuming combined arms assault.

The term “trench warfare” conjures up many images. However in 1904-05 the belligerents were still experimenting with entrenchments. A trench can be simply a hole in the ground, however throughout the war more elaborate trenches were made. The freshly dug dirt needed to be made into a berm or cleared away carefully. It often showed up as a different color than the weathered soil on the surface, and thus was a clearly visible target for artillery unless the fresh dirt was hidden. Trenches had to be laid carefully within the confines of the ground or they could be exposed to enfilade fire. Trenches were zig-zagged so as to prevent the breach of one section from giving the attacker a clear line of fire throughout the length of the trench. Head cover became important for air burst shrapnel and plunging fire from light howitzers and mortars³³³. Poorly constructed trenches were easily breached.

Major Rowan-Robinson, commenting on Russian trenches at the Yalu noted that they “are shallow, clearly visible, and ill-sited, unprovided with head-cover and untraversed against enfilade fire”³³⁴. Throughout the war some commentators would distinguish between the

³³³ Against heavier artillery headcover was more problematic. These issues are dealt with in great detail in “Backsight Forethought” a pseudonym for Ernest Dunlop Swinton, *The Defence of Duffer's Drift* (original 1903, reprinted by Avery Publishing, 1986).

³³⁴ Major H. Rowan-Robinson, *The Campaign of Liao-Yang* (Constable & Co., 1914) page 43. It should be noted that observers noted a marked increase in the quality of entrenchments constructed by the Russians during the Russo-Japanese War. The entrenchments at the Yalu were the worst noted during the war.

quality, rather than simply the presence or absence, of trenches. For example, in one report Lieutenant-General Sir Ian Hamilton noted that the Russian artillery emplacements at the Yalu, the same ones criticized by Rowan-Robinson, “afforded a most famous mark for Japanese target practice. As to the infantry trenches they were glaringly conspicuous, and no artillery could have desired a better mark to have fired at. Nor did they compensate for this worst of all defects, in my opinion, by strength”³³⁵. Yet even these poorly constructed fortifications could delay offensives using improper tactics. The same officer of Royal Artillery, Major Rowan-Robinson, noted that destructive fires were easily defeated, even by poor entrenchments. Commenting on the Yalu crossing he argues that “the Japanese artillery bombards the positions about Chiu-lien-cheng for two or three hours, and, though causing no loss in the trenches, is fortunate enough to drop some shells into a bivouac”³³⁶. Bad trenches were easily suppressed, but hard to destroy.

Major Kuhn had a detailed analysis of the types of fortifications. Even hasty improvements could be very effective.

The line of Russian ‘trestle’ obstacle was over 400 yards long, while the line of Japanese ‘tripod’ obstacle was about 150 yards long. The two lines were less than 100 yards apart at their nearest point. Both were exceedingly formidable, and it is doubtful whether a man could have crawled through either of them. They both involved an immense amount of labor in their construction and were devised to meet a special situation where hostile lines 200 yards apart faced each other for four

³³⁵ Ian-Hamilton report on “Battle of the Yalu and the Events Leading Up to It” 14 May 1904, Great Britain General Staff: War Office *The Russo-Japanese War: Reports from British Officers Attached to the Japanese and Russian Forces in the Field* **Marked Confidential** (volume one, no publisher, 1905) page 49. In Ian-Hamilton’s view this poor deployment led directly to the rapid destruction of Russian artillery when confronted by Japanese howitzers during the crossing, per his remarks later in the same report, page 51.

³³⁶ Major H. Rowan-Robinson, *The Campaign of Liao-Yang* (Constable & Co., 1914) page 47.

and one-half months. Both were constructed under fire, and the mystery is how the work was accomplished³³⁷.

The topic of hasty entrenchments was also discussed by Captain Judson, US Army Corps of Engineers, who described a Japanese attack during Mukden that “forced the Russians back until March 1, when the latter took up a strong position... this position they hastily fortified, and they were never driven out of it, but inflicted such losses on Kawamura³³⁸ during the following week as to ruin, I believe, the efficiency of the army [of the Yalu, not the whole Japanese Army]”³³⁹.

The question of hasty entrenchments was addressed by deNégrier in the context of the Japanese response to Mishchenko’s raid. While Mishchenko had a larger force, backed by horse artillery, a small detachment of Japanese were able to quickly entrench themselves at the Yinku rail and telegraph station. He notes that “six Russian batteries were in action. The Japanese were without artillery, but were entrenched. The buildings near the railway station caught fire; but the attack, although continued till night, was a failure”³⁴⁰. The hasty fortification had held back a superior force, armed with artillery. He speculates further, however, that had the Russians been equipped with indirect fire weapons, such as howitzers

³³⁷ Joseph Kuhn report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 2) (US Government Printing Office, 1906) page 114.

³³⁸ Kawamura was attacking with the Army of the Yalu, which was a hastily assembled unit of reservists, replacements, and Japanese garrison units fielded for what was hoped, by the Japanese, to be the decisive final battle at Mukden.

³³⁹ William V. Judson report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 3) (US Government Printing Office, 1907) page 167.

³⁴⁰ General Francois Oscar de Négrier, *Lessons of the Russo-Japanese War* translated with permission by E. Louis Spiers (Hugh Rees, 1906) page 25.

or mortars, the hasty entrenchments would have failed to hold, as they lacked overhead protection.

Open infantry assault formations developed during the war to deal with these entrenchment techniques, and seemed to meet with improved success, although ongoing Russian field fortification improvements and improved use of ground negated some of this advantage. In his analysis of Japanese assault tactics, Lieutenant-Colonel Haldane of the General Staff found that

the stubborn resistance of the Russians, posted generally behind a line of obstacles and the open nature of the ground have caused engagements to be much prolonged, and battles, which in the earlier days of the campaign were concluded between dawn and dusk, some months later covered several days. But their unusual, and indeed unexpected, length is not to be attributed alone to these causes, for experience has taught the Russians the value of concealing men and guns, and as that lesson has been taken to heart, the troubles of the Japanese attack have proportionately grown... The front became wider, and more open formations than those employed at an earlier period were adopted³⁴¹.

Lieutenant-Colonel Haldane commented on the increasing demands placed on infantry, both in terms of ammunition consumption and the ability to generate hasty entrenchments while under fire. His comment merited approval from Lieutenant-General Nicholson, who appended a note stating that “the suggestions put forward in his covering letter appear to me to be deserving of careful consideration; and I would refer more particularly to the supply of rifle ammunition during an engagement and the carrying of entrenching tools by the infantry

³⁴¹ Haldane “The Japanese Infantry Attack” 15 October 1905, Great Britain Committee of the Imperial Defence (Historical Section) *The Russo-Japanese War: Reports from British Officers Attached to the Japanese and Russian Forces in the Field* (volume two, His Majesty’s Stationary Office, 1908) page 502.

soldier”³⁴². The remarks to which Nicholson directed his approval were critical of existing British Army doctrine and training:

The difficulty of supplying the soldier with ammunition during a battle has been fully recognized by the Japanese, and men go into action with about 200 rounds... According to ‘Combat Training’ [existing British Army field regulations] it is impossible to entrench during an attack. This is doubtless the case as regards regular entrenchments, but the Japanese soldier, in spite of the heavy fire which he comes under in attacking the Russians, does a great deal of spade work... wherever the infantry halt in an attack, except in the final advance after reinforcing, traces of their spade work may be seen, and were they not provided with entrenching tools they would be placed at a grave disadvantage³⁴³

Indeed, so impressed were some observers about the value of field fortifications, that some argued that they could not be broken in direct attack, and had to be outflanked, compelling, rather than forcing, a withdrawal on the part of the defender. Captain Judson’s own observations indicated that “a fortified line of the belt type is invulnerable to frontal attack. It cannot be shaken by artillery fire, as the troops are protected against shrapnel, while the chances of hits by explosive shells are exceedingly small, and the result of such hits are not serious”³⁴⁴. The French General deNégrier, inspector general of the French Army, forcefully concurred.

The lessons taught by the South African War have not only proved themselves to be of undeniable cogency, but have assumed a form so abundantly corroborated in

³⁴² Nicholson comments on Haldane “Operations of the 2nd Japanese Army from 4th August to 4th September 1904, including the Battle of Liao-yang”, dated 8 November 1904, Nicholson’s cover dated 20 November 1904, Great Britain General Staff: War Office *The Russo-Japanese War: Reports from British Officers Attached to the Japanese and Russian Forces in the Field* **Marked Confidential** (volume one, no publisher, 1905) page 113.

³⁴³ Haldane “Operations of the 2nd Japanese Army from 4th August to 4th September 1904, including the Battle of Liao-yang”, dated 8 November 1904, Great Britain General Staff: War Office *The Russo-Japanese War: Reports from British Officers Attached to the Japanese and Russian Forces in the Field* **Marked Confidential** (volume one, no publisher, 1905) page 118.

³⁴⁴ William V. Judson report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo-Japanese War* (volume 3) (US Government Printing Office, 1907) page 202.

detail as to become conclusive, especially with regard to all matters relation to the extension of the fighting front. It is next to impossible for a front protected by really powerful weapons, and the employment of field defences, to be broken through even by troops of undaunted courage willing to sacrifice any number of lives³⁴⁵

The unanimous opinion on hasty entrenchments, and the stridency with which it was expressed, could be interpreted as a partial confirmation of the Bayesian approach, but beyond these points disagreements began to appear.

Rates of Advance

A third area of interest for assault tactics concerned rates of advance following the battle itself, including the pursuit. In this aspect the agreement that we have noted to be consistent with a Bayesian approach begins to break down. The observers and the commentators disagreed about the rate of Japanese advance. Some criticized the Japanese army for failing to pursue after clearing the battlefield, and for failing to close again upon the Russians³⁴⁶.

Captain (later General) Peyton March of the US Army Artillery remarked throughout his notes how “The Russian retreat was made coolly and without evidence of demoralization”³⁴⁷. This made pursuit difficult, as the Russian formations were never broken, they simply withdrew in order. To some, this was the paramount lesson of the war. Sedgwick argued that the striking thing about the war was that defeats were never converted into routs.

³⁴⁵ General Francois Oscar de Négrier, *Lessons of the Russo-Japanese War* translated with permission by E. Louis Spiers (Hugh Rees, 1906) pages 8-9.

³⁴⁶ There were no meaningful instances of successful Russian attacks that progressed to a pursuit decision, and so here the criticism is directed at the Japanese.

³⁴⁷ Peyton March report number 1, (July 1904) United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 1) (US Government Printing Office, September 1906) page 16.

“Nothing could exceed the crushing nature of the defeats at the battles of the Yalu and Telissu³⁴⁸, yet neither ended in disaster for the Russians... Generally speaking the rearguards were able to hold the enemy at arm’s length”³⁴⁹. Sedgwick, an artilleryman, argued that the ability of artillery to hamper offensive movement and draw out the length of tactical engagements made pursuit difficult. “The duration of modern battles has been increased by the long range and accuracy of fire of modern weapons. This is all to the advantage of a defensive attitude”³⁵⁰. When artillery opposed attacking infantry the

heavy losses inflicted in a few moments are more destructive at the moment to moral than the same losses spread over a length of time. At the same time, the long-drawn-out strain of such continuous nerve-tension must undoubtedly seriously affect attacking troops and make the prompt following up of victory a more difficult task than ever³⁵¹.

Lieutenant-General Sir Ian Hamilton argued that the modern battlefield would demonstrate tactical immobility, leading to set-piece battles. He argued that the ability to project suppressive fires had increased in accuracy and range, and thus immobilized the artillery. As artillery support was necessary for offensive movement, the offense could only move forward to the limits of artillery range before the battle would *have* to end:

In these days of the rafale [the use of quick firing artillery at its fastest speed] which is capable of destroying a battery in so short a time, concealment and cover have become absolutely essential... There is no doubt whatever (in my mind) that the days of artillery driving up and unlimbering in the open (as practiced by us on Salisbury Plain in 1899 and in the opening battles of the South African War) are as

³⁴⁸ Wa-fang-gou

³⁴⁹ Captain F. R Sedgwick, *The Russo-Japanese War on Land: A Brief Account of the Strategy and Major Tactics of the War* (Foster Groom & Co, 1906) page 129-130.

³⁵⁰ Captain F. R Sedgwick, *The Campaign in Manchuria, 1904 to 1905: Second Period- The Decisive Battles 22nd August to 17th October 1904* (George Allen & Company, Ltd, 1912) page 322.

³⁵¹ Captain F. R. Sedgwick, *The Campaign in Manchuria, 1904 to 1905: Second Period- The Decisive Battles 22nd August to 17th October 1904* (George Allen & Company, Ltd, 1912) pages 329-330

dead as would be the battery which attempted to resuscitate them during a battle. The Japanese do not advance their artillery, even behind cover, until they have supplemented that natural cover by digging gunpits to drop into at once. Much of the time now spent by our field and especially by our horse artillery, in trotting or galloping smarting into action in the open, had better, in future, be devoted to teaching officers and men to dig entrenchments and to sink as rapidly from view as possible.³⁵²

Captain Reichmann of the US Army returned from Manchuria convinced that warfare had changed, and sketched out a future much like Ian Hamilton's observations. Modern fires forced entrenchment on both sides, entrenchments forced slower deliberate advances, and slow advances allowed the defender to better entrench. He wrote that:

according to the theory of battle the attacker should in the first place silence the opponent's artillery. He then covers the defender's trenches with fire, and thus enables his own infantry to advance without undue loss to the position whence the final assault is to be launched. In order to be able to withstand this artillery fire and enable his infantry to repulse the attacker's infantry the general on the defense must provide shelter for his men. The effect of shrapnel fire is so searching, so murderous, that this precaution is imperative. It may be truthfully said of the Russians, and probably of the Japanese, that when they did not march or fight they dug... The Japanese generally prepared every attack by an artillery bombardment... Without substantial trenches the Russian infantry could not have remained in the position without being annihilated by this terrible fire... As it was, the Russian infantry was enabled to remain in its position and show such a firm attitude that the Japanese attack came largely to a standstill at the edge of the grain fields at the foot of the hills.³⁵³

While reading the reports Lieutenant-General Nicholson noted that while railroads may have increased mobility in some instances, being wedded to railways served the defense more than

³⁵² Ian Hamilton, cover letter to reports on field artillery by Hume and Vincent, 20 November 1904, Great Britain General Staff: War Office *The Russo-Japanese War: Reports from British Officers Attached to the Japanese and Russian Forces in the Field* **Marked Confidential** (volume one, no publisher, 1905) page 351. Lieutenant-Colonel Hume's own report notes that the war taught "an object lesson to both sides on the danger of maneuvering in range and view of guns in position. It is dangerous enough to move guns under fire even when they are behind the crest of the hill" Hume's report in *ibid*, page 367

³⁵³ Carl Reichmann report, United States War Department: Office of the Chief of Staff (Military Information Division) Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War (volume 1) (US Government Printing Office, September 1906) pages 264-65.

the attack. “The possession of a broad-gauge railway in working order has greatly facilitated the successive retirements of the Russians, and the absence of railway communications and of metalled roads, combined with the heavy rains, has equally retarded the following up of successful engagements on the part of the Japanese”³⁵⁴. Despite relatively minor disruption and sabotage by the retreating Russians, the Japanese could not advance as quickly as the Russians could withdraw, strategically or tactically. The consumption of ammunition and supplies kept Japan close to the railheads, and thus the army could advance at the speed of the railroad reconstruction engineering crews.

In the preparation for Mukden the Germans had already noted a decline in the quality of Japanese artillery given the physical effects of prolonged combat. As a result of heavy usage barrels of artillery, especially the indirect firing high angle howitzers and mortars, were hopelessly fouled. “Most of the barrels had, moreover, greatly suffered by the severe strain they were put to at Port Arthur, and had lost a great deal of their efficiency”³⁵⁵. Thus, even the Germans, who were critical of the Japanese rate of advance, recognized that the exhaustion of the offensive was more than the spiritual exhaustion of the army, but also included the physical wearing down of the instruments of battle. As artillery was

³⁵⁴ Nicholson, “Comments on the Advance of the 1st Japanese Army from the Yalu River to Liao-yang, 2nd May to 3rd September 1904, and the Organisation of its Lines of Communication”, 7 November 1904, Great Britain General Staff: War Office *The Russo-Japanese War: Reports from British Officers Attached to the Japanese and Russian Forces in the Field* **Marked Confidential** (volume one, no publisher, 1905) pages 186-187. Ian-Hamilton concurred, noting at the same time that “even one days advance for an army such as ours [1st Japanese] involves a line of communication question of a very great magnitude and difficulty” (ibid) page 198.

³⁵⁵ German General Staff (Historical Section), *Between San de Pu and Mukden* [sic] Lieutenant Karl von Donat (editor and authorized translator) (Hugh Rees, 1913) page 114.

acknowledged to be an important part of any combined arms offensive, worn out artillery was bound to slow and hamper further advance.

The difficulty in maintaining offensive momentum was not just a matter of logistics and tactics, for some commentators the flaw was at the level of the intangible spirit of the army. In explaining why the bulk of Zassulich's army survived the Japanese breakthrough at the Yalu, Rowan-Robinson notes that "victorious troops are satisfied when they have captured a position, and imagine then their duty to be accomplished and their energy to be expended. Beaten troops, on the other hand, show an altogether wonderful mobility, and, unless the pursuit be instantly undertaken, will certainly escape. As a motive power fear has a higher value than enthusiasm"³⁵⁶. Commenting upon Wa-fang-gou, fought a few months later, Burne made a similar observation. "The Japanese, as usual, failed to pursue, the reason given this time that the troops were too fatigued. It is to be noted that there are few occasions, if any, in history where the defeated side are too fatigued to retreat!"³⁵⁷. A repeated theme in the German discussion is that even after winning decisive battles, "the victor was completely exhausted, and no longer able to carry out a vigorous pursuit"³⁵⁸.

There was disagreement about the feasibility of pursuit and maintenance of contact following battles. Critics argued that it was primarily a matter of mental and physical exhaustion that kept the Japanese from following up on their successful battles. Others

³⁵⁶ Major H. Rowan-Robinson, *The Campaign of Liao-Yang* (Constable & Co., 1914) page 58

³⁵⁷ Lieutenant-Colonel A. H. Burne, *The Liao-Yang Campaign* (William Clowes, 1936) page 62

³⁵⁸ German General Staff (Historical Section), *Liao-Yan* [sic] Lieutenant Karl von Donat (editor and authorized translator) (Hugh Rees, 1913) page 215

argued that warfare had changed, and not only did the duration and ferocity of combat deplete offensive units, it also conspired to slow the rate at which prudent offensives could be conducted to the rate at which heavy indirect fire weapons could be transported and set up under cover.

The German Tactical System for Assault

The Japanese based their tactical system on the German tactical system. Prior to 1904 they had a number of German advisors writing doctrine and field manuals, conducting and monitoring training exercises, and otherwise assisting in the development of military operations and tactics. The German tactical system at the turn of the century was, however, different from the modern German tactical system that emerged during the First World War, and is today thought of as the German system³⁵⁹. It placed less emphasis on the decentralization of command and mission type orders, the *Auftragstaktik* that has become the hallmark of the modern system, and more on centralized command enforced along dense groups of soldiers³⁶⁰. In many ways the density and the command and control system reinforced each other. The density was required to enable nineteenth century command and

³⁵⁹ For a discussion of the German turn of the century tactical system see Colonel Otto Griepenkerl, *Letters in Applied Tactics: Twenty Four Tactical Exercises Dealing with the Operations of Small Detached Forces of the Three Arms* authorized translation by Karl von Donat, (Hugh Rees, 1907), on the changes in tactical doctrine see Timothy Lupfer *The Dynamics of Doctrine: The Change in German Tactical Doctrine During the First World War* (Leavenworth Paper 4, US Government Printing Office, 1981).

³⁶⁰ Even in the late 1800s there was a movement towards a decentralized system. Colonel Sigismund von Schlichting began arguing for decentralized command and control and dispersed infantry formations as early as 1879, but was opposed in whole or in part by most of the traditionalists, including Caemmerer and Freytag-Loringhoven. See Antulio J. Echevarria *After Clausewitz: German Military Thinkers Before the Great War* (University Press of Kansas, 2000), especially pages 38-42 and Eric Dorn Brose, *The Kaiser's Army: The Politics of Military Technology in Germany During the Machine Age, 1870-1918* (Oxford University Press, 2001). A fuller discussion of debate surrounding German infantry tactics within the German military will be introduced in chapter seven.

control. The density existed in two dimensions. First, soldiers were packed tighter horizontally, with each soldier responsible for a very narrow section of ground. Second, rows of soldiers were staggered densely, with one closely following the next.

Throughout the Russo-Japanese War the Japanese infantry was subject to harsh tests of effectiveness, especially on the offensive against fixed and hastily improvised fortifications. During that time Japanese tactics adjusted, presaging the shifts documented by Lupfer during the First World War³⁶¹. The degree of this shift was a matter of some dispute among the observers and commentators.

Among the other commentators after the war, Sedgwick was aware that the Japanese tactical system was modeled on continental systems, but he noticed that it changed early in the war, even by the time of Wa-fang-gou.

At Yalu and Nanshan the Japanese fought according to the book, that is, the book of the European Army, dense lines pushing forward, regardless of losses, to close range, with a view to a bayonet charge... Their formations at Tehlissu³⁶² are said to have been already more flexible. Already they had realized that men must push forward from cover to cover in flexible lines of skirmishers to establish fire superiority.³⁶³

Sedgwick praises Japanese infantry tactics in which firing lines were divided into small dispersed sections which advanced in bounding overwatch, with artillery support³⁶⁴.

³⁶¹ Lupfer. *Dynamics of Doctrine*, (op cit).

³⁶² Telissu, or Wa-fang-gou

³⁶³ Captain F. R. Sedgwick, *The Russo-Japanese War on Land: A Brief Account of the Strategy and Major Tactics of the War* (Foster Groom & Co, 1906) page 39.

³⁶⁴ Captain F. R. Sedgwick, *The Campaign in Manchuria, 1904 to 1905: Second Period- The Decisive Battles 22nd August to 17th October 1904* (George Allen & Company, Ltd, 1912) page 340.

Lieutenant Colonel McClernand, an American observer, noted the influence of German tactics on the Japanese, but argued that by the end of the war the Japanese had evolved. "It is conceded that as the war progressed the Japanese made a considerable change in their extended order formations and attacked in much wider and looser ones than in the earlier battles fought, and to this extent at least broke away from their German teaching"³⁶⁵.

Captain March's report included a detailed analysis of the adaptation displayed by Japanese infantry tactics through Liao-yang. He noted that:

one of the first results noticeable as the war progresses is the increase in interval between files in the infantry attack. Before I came to Manchuria I saw Japanese infantry at drill at Aoyama Park in Tokyo, showing small intervals in the first stages of the advance and closing in still more in the last rush, the so-called German method of attack. During the advance on Liaoyang [sic], however, their method was not distinguishable from the American method in any marked degree. They took every advantage of cover, with plenty of intervals between files, and used individual fire. It is not at all the headlong rush of masses of men across the open which the paragrapher depicts. On the contrary, the infantry is not set out at all by day unless the enemy's position has been thoroughly shaken by artillery fire³⁶⁶.

Like the Americans, the British also noticed how the Japanese departed from German orthodoxy. Captain Jardine of the 17th Lancers observed that

the Japanese infantry did not employ what one is used to term the German formations in the attack. They were like ours, but by no means so extended as one often saw in the South African War. The greatest care was taken to utilize cover and

³⁶⁵ Edward J. McClernand report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 3) (US Government Printing Office, 1907) page 76.

³⁶⁶ Peyton March report number 3, (October 1904), United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 1) (US Government Printing Office, September 1906) page 43.

take advantage of folds in the ground and in the early stake of the advance advantage was taken of cover from view afforded by the Indian corn khets [Kau-liang].³⁶⁷

Jardine's views were echoed by Haldane, who noticed that the development of hasty entrenchments forced assault infantry to open up formations³⁶⁸. The Japanese, deNégrier found, were initially surprised by the importance of cover, but quickly adapted. They also recognized that those German regulations, adapted wholeheartedly, were insufficient.

'You are doubtless astonished,' said a Japanese officer to a French attaché after the battle of Liao-Yang, 'at the difference between what you see here and anything you may have witnessed at home in times of peace. We were not less astonished ourselves. Our regulations, as you know, are identical with those of the European armies. We, too, began by maneuvering according to the drill-books, and thus it was that we contrived to carry the lines of Nan-shan on May 27 in a single day. But at what terrible sacrifice! Our third division... was decimated. We have profited by that lesson, and, thanks to the experience we have acquired, we have learnt not only not to go ahead so fast, but also to keep under better cover.' The chief characteristic, in fact, of Japanese tactics is the skilful use they make of cover sometimes so light as to escape the ordinary observer³⁶⁹

Yet this was not the unanimous view. Colonel Hoffmann noted that "at the beginning of the war the instruction of the troops was conducted quite on the German principles – they had simply translated the German Service Regulations into Japanese, and in the same way they had endeavoured [sic] to model the General Staff on German principles. In this was our German principles for the command and the instruction of the army were tested in the

³⁶⁷ Jardine, "The Battle of Chaotao" 27 July 1904, Great Britain General Staff: War Office *The Russo-Japanese War: Reports from British Officers Attached to the Japanese and Russian Forces in the Field* **Marked Confidential** (volume one, no publisher, 1905) page 235-236.

³⁶⁸ Haldane "The Japanese Infantry Attack" 15 October 1905, Great Britain Committee of the Imperial Defence (Historical Section) *The Russo-Japanese War: Reports from British Officers Attached to the Japanese and Russian Forces in the Field* (volume two, His Majesty's Stationary Office, 1908) page 502.

³⁶⁹ General Francois Oscar de Négrier, *Lessons of the Russo-Japanese War* translated with permission by E. Louis Spiers (Hugh Rees, 1906) page 62.

war, and we can be satisfied with the results”³⁷⁰. In his note appended to the German General Staff study of Mukden, General von Caemmerer writes:

it is my conviction that this great battle as well as the whole course of the East Asiatic war have most admirably confirmed the doctrines of the German Service Regulations. If it could be said that these doctrines were held in high esteem without dissentient voices, and that no doubts or differences of opinion existed in the domain of Tactics, then any word of explanation might well be considered as superfluous. But we have not got as far as all that by a long way; an ardent adherent of the German tactical regulations may therefore be allowed to comment upon their correctness and expediency by taking as an example the battle of Mukden³⁷¹

The “dissentient voices” noted by von Caemmerer were those followers of von Schlichting advocating looser formations³⁷². Von Caemmerer goes on to approvingly cite Japanese efforts to concentrate the advances of multiple units towards the battle, in conformance with Schlieffen’s infantry regulations. Mukden, it should be noted, was the last major battle of the Russo-Japanese War, by which time Japanese tactics were alleged to have shifted, and von Caemmerer was writing from Germany for the *Official Account*, and thus the lag should have been sufficient to accomplish any Bayesian adjustment.

³⁷⁰ Major General Max Hoffmann, *The War of Lost Opportunities* (translated by A E Chamont, originally published by Keegan Paul, Trench, Trübner & Co, reprinted by the Naval and Military Press Ltd, 2004) page 16.

³⁷¹ Lieutenant-General Rudolf von Caemmerer, “Comments on the Battle of Mukden,” in Lieutenant Karl von Donat (editor and authorized translator) *The Battle of Mukden* supplement to the *Military History of the Russo-Japanese War* (Hugh Rees, 1906) pages 55-56. Mukden was the last major engagement of the war, by which point any Japanese adjustment would have been apparent.

³⁷² Von Schlichting argued that German tactics and command and control were outmoded, and that they needed to be adjusted to more open order formations with greater emphasis on *auftragstaktik*. A fuller discussion of von Schlichting and the tactical debates within the pre World War German army will be in chapter seven discussing the cognitive-cultural research program.

Summary: Conduct of the Offensive

The analysis of views on infantry attack also suggests problems with the Bayesian model. While there was convergence on the value of hasty field fortifications for both the attack and the defense as well as convergence about the rates (though not the implications) of ammunition consumption, there was debate over two issues related to assault tactics. Observers did not agree that the Japanese rate of advance was justified. Some argued that rapid pursuit of the defeated Russians was possible, and the failure to pursue was an issue of morale and leadership. Others argued that pursuit was hamstrung by the logistics of moving artillery and munitions, as well as constructing offensive fortifications, i.e., that the problem was material, not moral. There was also debate on to what extent, and even whether, the Japanese continued to employ the German tactical system for infantry assault throughout the war. Many observers noted that the Japanese began with the German system, but very quickly adjusted after Nan-shan, and began employing more open formations and delegating tactical leadership to lower levels. Others insisted that the Japanese retained the German system throughout the war.

Other Military Factors in the Russo-Japanese War

Up to this point we have discussed matters of technology and force employment. In this section I will examine the more amorphous and intangible factors surrounding warfare, which have been linked to broader theories explaining the causes of war. This includes a belief in the decisive importance of surprise, the presence of a bold (as opposed to cautious) mentality among the senior military leadership, and a popular soldier (or sailor) level belief in

the offensive spirit. The views of observers and commentators are shown in the following chart:

Chart 3 – 5 Summary of the Moral Factors

Country	Service	Author	Title	Official	Year	General / Admiral	Soldier / Sailor	Surprise
France	Infantry	Cordonnier	Japanese in Manchuria	No	1912	Bold	Discipline	
France	Gen Staff	de Negrier	Lessons	No	1906	Bold		
GB	Marine	Aston	Amphib	No	1920			Yes
GB	Infantry	Bird	Lectures	No	1909	Bold	Spirit	No
GB	Artillery	Burne	Liao Yang	No	1936	Bold		Yes
GB		Childers	War and the Arme Blanche	No	1910		Discipline	
GB		Footsloggers	Short Account of Russo-Ja	No	1925			No
GB	Cavalry	French	Cavalry	No	1914	Bold	Spirit	
GB	Intelligence	Haldane	Reports	Yes	1906		Discipline	
GB	Infantry	Hamilton	Reports	Yes	1906	Bold	Discipline	No
GB	Infantry	Hamiton	Liao Yang (Forward)	No	1936	Bold		
GB	Infantry	Home	Reports	Yes	1906		Discipline	
GB	Artillery	Hume	Reports	Yes	1906		Discipline	
GB	Cavalry	Jardine	Reports	Yes	1906		Discipline	
GB	Staff	Kearsey	Russo-Japanese War	No	1935	Bold	Discipline	
GB	Engineer	Nicholson	Reports	Yes	1906		Discipline	
GB	Cavalry	Orton	Cavalry Taught by Experience	No	1910		Spirit	
GB	Gen Staff	Robertson	Arme Blanche (forward)	No	1910		Discipline	
GB	Artillery	Rowan-Rol	Liao Yang	No	1914	Bold	Discipline	Yes
GB	Artillery	Sedgwick	Campaign in Manchuria	No	1912		Discipline	No
GB	Artillery	Sedgwick	The R-J W On Land	No	1906		Discipline	
GB	Gen Staff	Smith Dorr	Short Account of Russo-Ja	No	1925	Bold		
GB	Staff	Staff	Official History	Yes	various		Discipline	
GB	Staff	Staff	Tactical Notes	Yes	1906		Discipline	
GB	Artillery	Waters	Reports	Yes	1906		Discipline	
Germany		Asiaticus	Reconnaissance	No	1908		Spirit	Yes
Germany	Cavalry	Bernhardi	Cavalry	No	1914	Bold	Spirit	
Germany	Gen Staff	Caemmere	Mukden	Yes	1906	Bold	Discipline	
Germany	Gen Staff	Hoffmann	Diares	No	1929	Bold	Discipline	
Germany	Gen Staff	Hoffmann	Lost Opportunities	No	1929	Bold		
Germany	Staff	Staff	Mukden	Yes	1906	Bold	Discipline	
Germany	Staff	Staff	Liao Yan	Yes	1913	Bold		
Germany	Staff	Staff	Ya-Lu	Yes	1913	Bold	Discipline	Yes
Germany	Staff	Staff	Wa Fan Gou	Yes	1913	Bold	Discipline	
Germany	Staff	Staff	The Scha-Ho	Yes	1913	Bold	Discipline	
Germany	Staff	Staff	San de Pu	Yes	1913	Bold	Discipline	Yes
USA	Artillery	Arnold	Why the Russians Lost	No	1930		Spirit	
USA	Cavalry	Ingram	Use of Cavalry	No	1931		Spirit	
USA	Engineer	Judson	Reports	Yes	1907		Discipline	
USA	Engineer	Kuhn	Reports	Yes	1906		Discipline	
USA	Artillery	March	Reports	Yes	1906		Discipline	No
USA	Cavalry	McClernan	Reports	Yes	1907		Spirit	Yes
USA	Infantry	Morrison	Reports	Yes	1906		Discipline	
USA	Infantry	Reichman	Reports	Yes	1906			No
USA	Artillery	Wood	Yalu to Port Arthur	No	1905		Spirit	
USA	Navy	McCully	McCully Report	Yes	1906	Bold	Spirit	Yes
USA	Navy	Mahan	Naval Strategy	No	1911	Bold		
GB	Navy	Bridge	Naval Campaign of 1904	No	1905	Bold	Discipline	No
GB	Navy	Corbett	Maritime Ops	Yes	1914	Caution	Discipline	No
GB	Navy	Custance	Ship of the Line	No	1912	Bold		
GB	Navy	Jackson	Reports	Yes	1904-05			No
GB	Navy	Pakenham	Reports	Yes	1904-05		Discipline	No

Bold = 24	Spirit = 10	Yes = 8
Caut = 1	Disc = 30	No = 10

General / Admiral: Should commanders be bold or cautious?

Soldier / Sailor: Is it more important to have a strong offensive spirit or to be disciplined?

Surprise: Is surprise a critical factor in military success?

Surprise and First Strike in the Russo-Japanese War

Despite the fact that Russia was well aware of Japan's preparations for war and unhappiness with the status quo in Manchuria and Korea; despite the fact that Russia had watched Japan execute an amphibious Manchurian campaign begun with a surprise attack in the earlier Sino-Japanese War (1894-1895); despite the fact that Russia was aware of Anglo-Japanese collaboration on capital ship design and construction and German-Japanese collaboration on military doctrine; despite knowledge that the Japanese battlefleet had sortied; and despite a rapid deterioration of diplomatic relations; Russia was diplomatically and militarily surprised by the outbreak of war in 1904. Their fleet in Port Arthur was at anchor with a peacetime watch³⁷³, their detachment in Chumulpo was unprotected, fortification of the Yalu was non-existent, and fortification of Port Arthur was incomplete. Diplomatic history indicates that the Tsar and his ministers remained surprised for days by Japan's audacious attacks without a declaration of war³⁷⁴. Japan obtained surprise, but observers were closely divided about whether this surprise was an important, much less decisive, factor in Japan's victory in the war.

Discussing surprise and mobilization, Aston argues that

in times of strained relationship, the issue of an order to mobilise will always tend to precipitate hostilities, and, if a rapid blow is to be struck, it may be of great importance to save the days required for proper mobilisation... The Japanese naturally did not want to give notice of their intentions by ordering

³⁷³ The Russian Admiral, Stark, was concerned about the possibility of a surprise attack and had requested permission to increase fleet readiness in the days prior to the attack, but this request had been refused by the Viceroy, Alexeieff. See Connaughton, *War of the Rising Sun and Tumbling Bear* (op cit) pages 29-32.

³⁷⁴ Connaughton, *War of the Rising Sun and Tumbling Bear* (op cit) page 34.

mobilisation too soon, and at the same time it was part of their plan to get troops to Chemulpo and Seoul before they could be anticipated at those places by the Russians. Hence their employment of battalions on a peace footing to strike the first blow³⁷⁵

On war initiation Aston goes on to note that “it is a question of racing for the initiative, in order to carry out one’s own plan, because if the enemy gets a start the initiative will lie with him... A miscalculation of the time problem on the outbreak of war will in all probability affect the whole campaign, and may lead to complete failure in the attainment of one’s object”³⁷⁶.

Major Rowan-Robinson was concerned with the initial tempo, and found it to be vitally important, if not always decisive. Preparation for rapid mobilization and deployment

will exercise a more potent influence on the campaign than will the strategy and tactics adopted after the initial deployment... A quicker mobilization, an earlier deployment on the frontier, a higher collective mobility, and a more efficient intelligence system will endow a belligerent with initiative and will enable him to destroy the independent will and freedom of action of his unready adversary³⁷⁷.

It was possible for a vigorous and well prepared opponent to regain the initiative if the attacker failed to press their advantage, but this relied on the attacker making the mistake of losing the advantage, as well a defender having the ability to grab it when offered. Thus, he argued, in the case of the Russo-Japanese War as well as most cases surprise was a critical factor.

³⁷⁵ Major-General Sir George Aston, *Letters on Amphibious Wars* (John Murray 1920) page 261.

³⁷⁶ Major-General Sir George Aston, *Letters on Amphibious Wars* (John Murray 1920) page 227

³⁷⁷ Major H. Rowan-Robinson, *The Campaign of Liao-Yang* (Constable & Co., 1914) page 21

Japan's surprise of the Russians had not generated much material success. An isolated cruiser and gunboat in Korea were destroyed, and in good weather without harassing fire a well planned torpedo attack had only damaged two Russian ships in Port Arthur. Lieutenant-Colonel Burne argued that despite its limited material effect in this instance, the moral effects of surprise and first strike in the attack on Port Arthur were considerable. "The performance of the Japanese fleet was, in fact, distinctly unimpressive and ineffective... Nevertheless, in conjunction with the destroyer attack, it had in reality had considerable effect. It increased the morale of the Japanese and correspondingly depressed that of the Russians: and in war the first round counts for much"³⁷⁸. American naval officer Commander Newton McCully drew much the same conclusion from the Port Arthur raid. "For the Russians, their most serious loss was in their self-confidence, due to the dash and initiative of their enemy, and this was a loss from which they never recovered during the rest of the war, and led in several occasions later to still more serious material losses"³⁷⁹.

Other commentators looking at first strike, such as Major Bird of the British Army, were more circumspect. Bird noted that "the value and importance of the initiative is another lesson of the war... The initiative does not belong in perpetuity to the assailant, to him who first attacks, for the defender, by an early counter-strike, may reverse the positions"³⁸⁰. This

³⁷⁸ Lieutenant-Colonel A. H. Burne, *The Liao-Yang Campaign* (William Clowes, 1936) page 18

³⁷⁹ Lieutenant Commander Newton A McCully, *The McCully Report: The Russo-Japanese War, 1904-1905* (US Naval Institute Press, 1977- reprint of May 1906 Memorandum prepared for the US Secretary of the Navy) pages 67-68.

³⁸⁰ Brevet-Major W. D. Bird, *Lectures on the Strategy of the Russo-Japanese War* (Hugh Rees, 1911), page 66.

differs from Rowan-Robinson, in that Bird believed that a defender could redress initial reverses even if the attacker did not err by ceasing offensive action.

Captain Pakenham, of the Royal Navy, was skeptical of plans predicated on surprise delivering decisive results. He argued that there was too much uncertainty involved to actually plan on achieving surprise and complete success. Plans that didn't have contingencies for the transitory nature of surprise were incomplete. While overall positively impressed with the Japanese war plan he argued that even

if its execution had been attended by the fullest measure of success, the Russian forces would have been struck down in every part of the field simultaneously... The coincidence obtained was extraordinary, yet in each branch of this mighty three-fold scheme there has been disappointment. The blows have fallen, and not without force; if nowhere as effective as their originators could have hoped, none have altogether missed their mark, while all have come close enough to it to show that the plan in its entirety was the outcome of the brain, and not dreamers, but of severely practical men, who had accurately gauged the capacity of their country for war on a colossal scale³⁸¹

Surprise was shown to be transitory at the Sha Ho, when the Russians attempted a counter attack and achieved surprise. Notes Bird "in spite of this warning, they [the Japanese] were in some degree surprised. But, as happened throughout the war, the Russian operations were so slow and hesitating that the Japanese, by a vigorous offensive, were able to deprive the enemy of his initial advantage"³⁸².

³⁸¹ Pakenham report 17 September 1904, Great Britain Admiralty Intelligence Office *The Russo-Japanese War 1904-1905: Reports from Naval Attachés* (republished by Battery Press, no date), page 198. The three blows are the naval sneak attack on Port Arthur, the landing in Korea, and the landing in Manchuria. He was writing this report while digesting the results of the battle of Liao-yang, in which the Japanese affected the junction of their separate Army groups in Manchuria, but failed to destroy Kuropatkin's army.

³⁸² Brevet-Major W. D. Bird, *Lectures on the Strategy of the Russo-Japanese War* (Hugh Rees, 1911), page 58

The German history notes that the tactical surprise on 8-9 February, and even the strategic surprise indicated by the lack of Russian preparation, was negated by the ability of the Russians, despite poor infrastructure and greater distances, to concentrate men and material more quickly than the Japanese could while on the offensive.

What the Russians accomplished in organization and administration with the aid of only a single, the Siberian, line of railway, which, moreover, was interrupted by Lake Baikal, is truly marvelous. In this way the evil of having been surprised by the war in a state of unreadiness, was entirely made good by degrees. The conditions for a successful conduct of the war by Russia did afterwards exist³⁸³.

This passage contrasts strongly with the previously noted quotations from Aston and Rowan-Robinson that stressed the importance of early mobilization in deciding the outcome of the war.

Intangible Factors of Character and Morale³⁸⁴

In the first reading of the documents, there is a strong emphasis on offensive spirit. However upon close examination the issue becomes more complex. Some authors use the terms of spirit and *élan* to refer to a strong internal discipline within the military units, which

³⁸³ German General Staff (Historical Section), *The Yalu* Lieutenant Karl von Donat (editor and authorized translator) (Hugh Rees, 1913) page 249.

³⁸⁴ The turn of the century literature is replete with terms for intangible qualities. The writers often refer to “moral factors”, but this archaic use of the term was not connected with morality or ethics, and was instead used as a blanket term for intangible qualities. *Morale*, as a French word transposed to English, specifically referred to patriotism and confidence and was augmented by the French word *élan*, referring to offensive spirit and unit cohesion. *Morale*, in its more modern English rendition, could encompass all of these terms, with dash specifically referring to offensive spirit. Character was often applied to descriptions of the commanding generals themselves. There was also an undercurrent of racially derived personality traits applicable to both soldiers and leaders, and most often of a negative connotation.

allow them to coordinate fire, remain effective while under fire, and carry out complex and dangerous tasks. Other authors use spirit in its more colloquial sense, encompassing a sense of patriotism and a commitment to offensive action. These nuanced differences are important. Indeed, most authors specifically contrast the two sides of the amorphous “moral factor”, expressing a clear preference for one type of intangible over the other. Data generated by the Russo-Japanese War do not resolve the tension between the two aspects.

A second variation within the moral factor is the issue of the tolerance of offensive boldness or caution on the part of the generals (and admirals) running the war effort. Some of the most strident exhortations toward offensive action are specifically directed at the *generals*, and often paired with a cautious tactical approach by *soldiers*. Here the Russo-Japanese War experience provoked a much more unified reaction on the part of observers. All but one observer who discussed the importance of boldness among leaders agreed that risk acceptance was an important attribute. Many other observers did not comment on the issue.

The importance of moral factors, not simply offensive spirit, but a broader belief in the war aims, was a recurring theme among some observers. In contrasting the Russians and Japanese, Bird notes

serious as were the above faults [in Russian tactics] they might have been partially overcome during the campaign, had all ranks been inspired with the sentiment of patriotism and unselfish devotion to duty. This was far from being the case...[In contrast the Japanese] commanders were, as a rule, rather prodigal of their men's lives, and the soldiers, responding gallantly to their officer's orders, often, by their doggedness, repaired mistakes of tactics and leadership³⁸⁵.

³⁸⁵ Brevet-Major W. D. Bird, *Lectures on the Strategy of the Russo-Japanese War* (Hugh Rees, 1911), page 16-17.

And thus Bird concludes that “having due regard to their military value, it may be concluded that the Japanese possessed over the Russians certain advantages of patriotism”³⁸⁶.

Just prior to the First World War, Major Rowan-Robinson of the Royal Artillery discussed the causes of Japanese victory, and cited both offensive spirit and training. The Russians “placed [their] entire faith in the bayonet, in solid formations, and in the value of moral... Maneuvers became theatrical displays - army corps in mass bristling with bayonets, cavalry charging, galloping batteries; and the inevitable lesson at the close that in morale lies the whole secret of war”. In contrast the Japanese were “imbued with the offensive spirit, were taught to obtain superiority of fire as a preliminary to the assault and to move in extended lines”³⁸⁷. Yet this view was not unanimous. Frontal attack remained, according to de Négrier, an impossibility despite ample spirit. “On February 26 the Japanese had taken the offensive across the whole line. Its front attacks, renewed incessantly until March 8, were all failures”³⁸⁸.

In contrast to this emphasis on offensive spirit and patriotism, Captain F. R. Sedgwick of the Royal Artillery commented that

so far as that inestimable military quality, moral, is concerned, there would seem to have been but little difference on each side. It has been the fashion to extol in terms of exaggerated praise the heroism of the Japanese. It cannot possibly be denied that the Russians showed fully equal courage and tenacity. Indeed... it speaks volumes for the excellence of the discipline of the Russian regiment that the men fought so well. This is only another example, if proof be needed, of the fact that discipline is

³⁸⁶ Brevet-Major W. D. Bird, *Lectures on the Strategy of the Russo-Japanese War* (*op cit*), page 18.

³⁸⁷ Major H. Rowan-Robinson, *The Campaign of Liao-Yang* (Constable & Co., 1914) pages 14-15

³⁸⁸ General Francois Oscar de Négrier, *Lessons of the Russo-Japanese War* translated with permission by E. Louis Spiers (Hugh Rees, 1906) page 34.

of far more importance to the moral of an army than enthusiasm and patriotism, valuable though these qualities are³⁸⁹.

Sedgwick made further comments on the fighting character of the soldiers continuing on the theme. “On either side the men showed themselves to be the best material possible. Both sides displayed perfect coolness under fire, and that courageous tenacity, not only under the stress of danger, but also under fatigue, that is the mark of a good soldier”³⁹⁰.

The German official history notes that spirit certainly provides an advantage, but discipline under fire is ultimately more important. They note numerous instances in Mukden where Japanese attacks, even if conducted with spirit, were abject and costly failures. “Early in the morning of the 7. [sic] the 17. Brigade... forced an entry into the Russian entrenched line at Yuhountun. In the course of the day it was annihilated by portions of the 1st Siberian Army”³⁹¹. Furthermore, even in defeat the Russians, almost without exception, were able to retreat in good order while inflicting casualties on the Japanese, denying the Japanese a decisive victory.

One of the more complex views is that of Sir Julian Corbett, who was primarily interested in naval affairs. Corbett was an outlier with respect to the importance of bold risk taking among leaders, emphasizing the need for caution given the long lead times necessary to

³⁸⁹ Captain F. R. Sedgwick, *The Campaign in Manchuria, 1904 to 1905: Second Period- The Decisive Battles 22nd August to 17th October 1904* (George Allen & Company, Ltd, 1912) page 318.

³⁹⁰ Captain F. R Sedgwick, *The Russo-Japanese War on Land: A Brief Account of the Strategy and Major Tactics of the War* (Foster Groom & Co, 1906) page 39.

³⁹¹ German General Staff (Historical Section), *The Battle of Mukden* Lieutenant Karl von Donat (editor and authorized translator) (Hugh Rees, 1906) page 36. This short document actually preceded the

replace damaged or destroyed naval assets. However this caution made him focus in on the discipline of the fleet, and this became his central focus. Corbett concludes his two volume, thousand page, study on the war by contrasting the nature of the moral forces on both sides with two final paragraphs:

To account for the Japanese success there is no need to invoke miracles of administration or temper. In organization and general readiness, in the training and behavior of the officers, they certainly had an advantage, but in the Russian rank and file the devotion, endurance, and warlike spirit displayed throughout the struggle were no less admirable than their own.

Yet it must not be denied to them that they did display in a conspicuous degree a temper which is perhaps the most creditable that war can show. It was that their long condemnation to a general defensive attitude, the enforced husbanding of their fleet, and shrinking from decisive battle, did not sap their offensive spirit. In the case of the Russians, and in that of the French in the old Franco-British wars, defence did kill the offensive spirit, and if the Japanese were able to preserve it they deserve to be credited with warlike character of the highest kind –a character rising high above mere devotion to a headlong offensive which is kept moving by its own impetus. It is here, then, if anywhere, in this enduring capacity to withstand the demoralizing influence of a prolonged defensive, that the Japanese showed upon the sea, at any rate, a distinctly higher genius for war than their enemy³⁹²

This quotation sets up a complex dialectic. Togo is, throughout the narrative, generally praised for not risking his battleships in an effort to destroy Vitgeft in Port Arthur and for not adopting close-in naval bombardment. He cautiously waited, and when opportunities arose he struck while preserving the safety of his irreplaceable battleships³⁹³. He again waited for nearly a year before he achieved “command of the sea” by obliterating the Baltic fleet at

longer multivolume history of the war, as Mukden was of great interest given the intensity, duration, and dispersal of the fighting.

³⁹² Sir Julian Corbett, *Maritime Operations in the Russo-Japanese War 1904-1905*, Volume II, (originally a confidential publication of the Committee on Imperial Defence, 1914, republished by US Naval Institute Press, 1994) page 398.

³⁹³ Of course, the loss of the *Hatsuse* and *Yashima* early in the war to mines brought home the nature of the risk of shore operations.

Tsushima. Yet throughout all of this waiting the sailors and officers did not despair, did not lose focus, and did not deteriorate in the performance of their duties. While he refers to this as “offensive spirit”, he also contrasts it with a “devotion to a headlong offensive” and returns to the qualities of military discipline.

In defending Togo’s decision not to pursue Vitgeft’s fleet as it retreated to Port Arthur with Kamimura’s fast cruisers after the Battle of the Yellow Sea, Corbett writes that

British opinion with its rich experience will probably see in such views the vicious sentiment which spoiled so many of our own actions –the tendency to rank trophies above the strategical object of a battle. Had Admiral Togo acted on the lines suggested the strategical objective would at least have been gravely risked... A renewal of contact could not have been ensured before dark, and not only would the four most powerful Russian ships have had a good chance of getting through to Vladivostok, but they might have dealt Admiral Kamimura a serious blow on the way. Such risks were not for the Japanese –the general situation forbade them to be taken. There can be little doubt that in resisting the temptation and keeping the strategical end resolutely in view Admiral Togo and his advisors showed the highest warlike character... It is well to remember that the Admiral had to decide the matter in a ship that had lost half her heavy guns, and for a squadron reduced in offensive power by a third, and that he had to decide it in the full consciousness that on the just estimation of the risk hung the issue of the war.³⁹⁴

The difference between battle discipline and *élan* was noticed by the American observers. Major Kuhn wrote that over the course of the war Japanese troop discipline declined, even if patriotic enthusiasm did not, as the Japanese mobilized more soldiers. “These later troops lacked none of the dash and spirit of their predecessors, but were simply less seasoned and skillful”³⁹⁵. Captain Reichmann, commenting on the increased length of battles, noted that

³⁹⁴ Sir Julian Corbett, *Maritime Operations in the Russo-Japanese War 1904-1905*, Volume I, (originally a confidential publication of the Committee on Imperial Defence, 1914, republished by US Naval Institute Press, 1994) page 404-405

³⁹⁵ Joseph Kuhn report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 2) (US Government Printing Office, 1906) page 90.

the physical exertions and the mental strain of the ten days' battle are apt to break down the entire human system –even the stolid nature of the Russian officers and soldiers succumbed under the stress of battle and numbers of them became insane at Liaoyang [*si*], -and neither patriotism nor enthusiasm will be able to hold up the men; it is discipline along that will triumph over human nature³⁹⁶.

Other observers echoed these comments, and noted especially that the Russian ability to retain cohesion and fighting ability despite retreating from *every* battlefield after engaging the enemy was impressive. In many ways it was judged to be easier to keep morale strong during victory, but to keep cohesion during retreat bespoke of strong discipline. While criticizing the tactics of the Russian leaders, Ian Hamilton expressed surprise as early as June 1904 that “I do not see how they [the Russians] can hope to prevail, even if their men resist the demoralization of constant failure and continue to preserve their present indifference to danger”³⁹⁷. And later after the battle of An-ping, Rowan-Robinson remarks that “once again the Russian have to suffer all the penalties of defeat without having been beaten. The 3rd Siberian Corps has more than held its own”³⁹⁸. Furthermore, these writers noted that Japanese soldiers and officers believed in the war effort, while few Russian soldiers or officers saw the importance of the Russo-Japanese War, and this again reflected well on the discipline of the Russians.

³⁹⁶ Carl Reichmann report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 1) (US Government Printing Office, September 1906) pages 279.

³⁹⁷ Ian-Hamilton, cover letter to Jardine “Outpost Affair at Aiyumon” 4 June 1904, Great Britain General Staff: War Office *The Russo-Japanese War: Reports from British Officers Attached to the Japanese and Russian Forces in the Field* **Marked Confidential** (volume one, no publisher, 1905) page 201.

³⁹⁸ Major H. Rowan-Robinson, *The Campaign of Liao-Yang* (Constable & Co., 1914) page 194.

In criticizing Russian moral factors midway through the Liao-yang campaign, Burne directed his words directly at the leadership (notably Zarubaiev and Kuropatkin), not the soldiers themselves.

For fifteen hours the Russian Army had withstood the assaults of its formidable and hitherto successful opponents... Yet all the sacrifice and courage of the troops were to be wasted, and the battle was to be decided by events beyond the immediate scene of action and by the character of the rival generals; for while the Japanese were preparing to renew the attack General Zarubaiev was beginning to retire³⁹⁹.

Wrote Burne after the battle of Liao-yang: “the Japanese army was fought to a standstill –*but Oyama had defeated Kuropatkin* [emphasis original]”⁴⁰⁰.

In his discussion of the failed Russian attack at Wa-fang-gou Burne is equally blunt.

It is easy to find reasons for the Russian defeat without having resort to tactical and technical failings... The predisposing causes of defeat were the hesitating and half-hearted attitude of the higher command, the shocking staff work, and the lack of initiative and driving force on the part of the executant commanders... In sum, the battle was lost and won primarily on moral grounds: a single-minded unfaltering attitude on the one side versus a cautious ‘looking both ways’ attitude on the other – ‘the moral is to the physical as three to one’⁴⁰¹.

Yet the “moral grounds” alluded to here are specific to the mindset of the commanding generals, in particular Simonov and, to a lesser extent, Stakelberg⁴⁰².

³⁹⁹ Lieutenant-Colonel A. H. Burne, *The Liao-Yang Campaign* (William Clowes, 1936) page 81.

⁴⁰⁰ Lieutenant-Colonel A. H. Burne, *The Liao-Yang Campaign* (*op cit*) page 113.

⁴⁰¹ Lieutenant-Colonel A. H. Burne, *The Liao-Yang Campaign* (*op cit*) pages 63-64.

⁴⁰² Burne was generally positive in his assessment of Gerngross’ actions. However, unsupported by Simonov, and without executive direction from Stakelberg, Gerngross could not achieve victory.

Even after World War One, Sir Horace Smith-Dorrien spoke out about the importance of an offensive disposition among commanders. Smith-Dorrien commanded British Expeditionary Force (BEF) Second Corps in the Battle of the Frontiers and executed an orderly retreat while delaying the Germans and is credited with saving the Allied position in 1914. He was eventually fired by his old adversary, Sir John French, for advocating a further withdrawal rather than a counterattack in 1914. His comment on the war was that

were I asked what particular principle stood out beyond others as proved to the hilt in that [Russo-Japanese] war I should say it was the marked advantage of the offensive. The force taking the offensive makes its own plans and follows them, whereas the one on the defense is in a chronic state of anxiety and has to conform to the movements of the adversary. Kurupatkin [sic] lived in a fog⁴⁰³.

In addition to their effects on military operations, the moral intangibles of commanders were also noted with respect to naval operations. Sedgwick reminded his readers of the “importance of not estimating entirely by paper strength, and of remembering that battles by sea, like battles by land, are ultimately won by men, and not by material appliances and machinery”⁴⁰⁴. Sedgwick argued that the passivity of Rozhdestvensky and Vitgeft meant that the paper equivalences of the rival fleets were not an accurate guide to results. Many observers repeated these assessments, singling out Makarov as a great naval leader among the Russians, and suggesting that his early death aboard the *Petropavlovsk* doomed the Russian naval effort⁴⁰⁵. As will be discussed more fully in the naval section of this chapter, a number

⁴⁰³ General Sir Horace Smith-Dorrien, “Foreword”, pages v-vi, in “Footslogger” [sic] *A Short Account of the Russo Japanese War for Examination Purposes* (Foster Groom & Co, 1925) page vi. Smith-Dorrien’s forward is dated 1 December 1924, even though the book itself was published in 1925.

⁴⁰⁴ Major-General Sir George Aston, *Letters on Amphibious Wars* (John Murray 1920) page 354.

⁴⁰⁵ Lieutenant Commander Newton A. McCully, *The McCully Report: The Russo-Japanese War, 1904-1905* (US Naval Institute Press, 1977- reprint of May 1906 Memorandum prepared for the US Secretary of the Navy).

of the naval observers concentrated on the intangible moral factors of the contending admirals.

Summary: Moral Factors, Surprise, and Warfare

The Bayesian approach is not entirely satisfying when it comes to questions of intangible moral factors and surprise. There is a nearly unanimous convergence on the issue of bold military leadership, though Corbett quite explicitly and intentionally dissents from this convergence⁴⁰⁶. However on the issue of military discipline versus offensive spirit there is a split, with two thirds of the observers tempering their praise of offensive spirit (which they do grant to be a positive attribute) by referring to discipline under fire as the more important intangible moral quality. The issue of surprise also provokes a sharp divergence, with about half of the observers claiming that surprise generates a long term and possibly decisive advantage, while the other half hold that the benefits of surprise are transitory, and slip easily away in a long war. Thus, the Bayesian approach does not fully explain the results seen with respect to intangible military factors.

Military Big Picture: Who Won? What is Winning Anyway?

The various tactical issues and somewhat arcane notions of intangible qualities discussed to this point risk obscuring the larger point, and that point is that these metrics all combine into

⁴⁰⁶ Sir Julian Corbett is also the only civilian examined. However, he was charged by the Admiralty to take over the writing of the official history from Jackson (who had himself been an observer with the Japanese fleet). Because he was specifically demanded by the Admiralty to complete this task, as well as other naval histories for the Admiralty, and the books were themselves based on and thus treated

assessments made by the observers and commentators about the efficacy and costs of the use of armed force in battle. When taken together the differences about these metrics resulted into wider disagreements about notions that would seem to be relatively simple, such as victory and defeat. The Russians never advanced after *any* battle, each battle resulted in the Japanese taking the field. Yet even in a war as simple as this, there were some striking differences. Few of these differences were differences of fact, but they were instead differences of interpretation. To make this point clearly it is worth examining the conclusions drawn about two battles, those of Liao-yang and Nan-shan. Both of these battles involved all arms of battle, both were discussed in detail by most observers and commentators, and both were major engagements that didn't strike the observers or commentators in anyway as quirky or unique.

Liao-yang

Liao-yang drew the most commentary of any battle during the war. The German history regarded Liao-yang as the decisive battle in the war. The volume of their Official History dealing with the battle has a commentary that begins with the quote that the “five days’ battle of Liao-yan [sic] was the turning-point in the Manchurian campaign”⁴⁰⁷. The commentary concludes with the observation that “it was not at Mukden and Tsushima that the Russians lost the campaign; they lost it already at Liao-yan [sic]”⁴⁰⁸. The high casualties

as classified documents, it seems appropriate to include it with the balance of the literature, albeit with this caveat.

⁴⁰⁷ German General Staff (Historical Section), *Liao-Yan* [sic] Lieutenant Karl von Donat (editor and authorized translator) (Hugh Rees, 1913) page 208.

⁴⁰⁸ German General Staff (Historical Section), *Liao-Yan* [sic] Lieutenant Karl von Donat (editor and authorized translator) (Hugh Rees, 1913) page 221.

experienced in, and even failure of, frontal attacks was repeatedly noted within the German history. They also note the ambiguous balance of advantage throughout the battle, almost until the moment when Kuropatkin retreated from the field.

American artillery officer Oliver Wood also viewed Liao-Yang as a clear Japanese victory, although he notes that in fighting the battle the Japanese expended all of their energy and resources, and thus could not exploit their victory to turn it into anything decisive.

The Russians were able to hold these entrenchments so long and to make the task of reducing them so terribly difficult that the Japanese had been fighting for ten days before they carried the position. After such an effort, unprecedented, so far as we know, in the history of warfare, the assailants could not have possessed sufficient physical strength to undertake a vigorous pursuit⁴⁰⁹.

Thus the Russian army withdrew, largely intact, and with the capability to launch a major counterattack at the Sha Ho two months later. However, Wood argued that “the defeat at Liaoyang [*sic*] is crushing as it stands”⁴¹⁰.

Yet Liao-yang as the decisive moment in the war is not the only view. Major Bird of the British Army argued that Liao Yang was “an indecisive battle”, as the Japanese left the Russian army intact, had themselves suffered heavy losses, and didn’t take a position of strategic importance⁴¹¹. Reflecting on the earlier phases of the battle, Rowan-Robinson was baffled.

⁴⁰⁹ Lieutenant Colonel Oliver Ellsworth Wood, *From the Yalu to Port Arthur: An Epitome of the First Period of the Russo Japanese War* (Franklin Hudson 1905) pages 106-107.

⁴¹⁰ Lieutenant Colonel Oliver Ellsworth Wood, *From the Yalu to Port Arthur (op cit)* page 107.

⁴¹¹ Brevet-Major W. D. Bird, *Lectures on the Strategy of the Russo-Japanese War* (Hugh Rees, 1911), page 21.

In the course of a fortnight the Russians have fought five defensive battles... These battles show a curious similarity. In each case, except for the disaster at Pien-ling, the Japanese attack has by nightfall proved a failure; in each case the Russian army retreats with the loss of morale and prestige that follows defeat, and the Japanese gain the credit of victory with its attendant advantages⁴¹².

Rowan-Robinson further contends that Russian concern for lines of communications and supply back to Mukden, and not defeat in battle, caused Russian troops to continually quit the field during Liao-yang, ceding victory to the Japanese.

On the 30th the Japanese make a determined attack on the advanced position, but by nightfall have returned to their trenches, having been beaten from end to end of the Russian line. On the 31st the assault is resumed against the right of the line, but, in spite of the most desperate valour on the part of Oku's troops, the 1st Siberians hold their ground. Relief, however, comes from Kuroki, who crosses the Tai-tzu on the night of the 30th -31st, and now, established on the right bank, is disturbing the mental equilibrium of the Russian commander by threatening the railway. Anxiety for the safety of that single artery is again the deciding factor. The positions so valiantly maintained are abandoned, and the army is redistributed⁴¹³.

The French General, deNégrier, considered Liao-Yang to be a *Russian* near victory, but it was then foolishly and inexplicably thrown away.

Kuropatkin held victory in his hand. General Kuroki's army was exhausted. The Russian reserves were not only in great strength, but were still intact. All that was necessary was to lead them to the attack... The army, instead of attacking, was backed into its prearranged position in the rear. It is useless to enter further into detail. No lessons are to be learnt from the Russian tactics⁴¹⁴.

The last sentence is particularly puzzling, for the preceding paragraph suggests that there was a lot to learn from Russian defensive tactics, as they had beaten off the Japanese attack.

⁴¹² Major H. Rowan-Robinson, *The Campaign of Liao-Yang* (Constable & Co., 1914) page 156.

⁴¹³ Rowan-Robinson, *The Campaign of Liao-Yang* (*op cit*) page 218-219.

⁴¹⁴ General Francois Oscar de Négrier, *Lessons of the Russo-Japanese War* translated with permission by E. Louis Spiers (Hugh Rees, 1906) page 58.

In reflecting on the lessons of the war, especially the Liao-yang campaign, Sedgwick faults Russian tactics, but not Russian strategy. "Defense strategy failed, but it may well be argued that this was in no small degree due to the bad tactical methods of the Russians"⁴¹⁵. He goes on to list Russian strategies including never, at any time during the *entire war*, deploying the reserves, using artillery in a direct fire method, the insufficient numbers of pack howitzers, mortars, and high explosive shells, the cumbersome command structure and the poor coordination of forces. Furthermore, he finds flaw with the Russian defensive tactic of keeping all troops in the initial trench, where they are exposed to artillery fire and attack. Instead he advocates breaking up the trench into interlocking patches of entrenchments⁴¹⁶. Yet even with all of these problems he also argues that the Japanese didn't really triumph, as the Russians retreated in good order while inflicting casualties upon the Japanese.

In scrutinizing the results of Liao-yang, Sedgwick concluded that

though a success it was no victory, for there was no pursuit and no demoralization of the vanquished. Kuropatkin had undoubtedly had a chance of overwhelming Kuroki; on the other hand he was falling back on to reserves drawing the Japanese after him away from their base. The Japanese Commander-in-Chief's tactics may be open to criticism⁴¹⁷.

At Mukden Sedgwick made the same observation.

The defeat was no Napoleonic one, no complete dislocation of the component parts of the force. There was no breaking through the line of defence, and driving the

⁴¹⁵ Captain F. R Sedgwick, *The Campaign in Manchuria, 1904 to 1905: Second Period- The Decisive Battles 22nd August to 17th October 1904* (George Allen & Company, Ltd, 1912) page 321.

⁴¹⁶ Sedgwick, *The Campaign in Manchuria, 1904 to 1905: Second Period (op cit)* page 342.

⁴¹⁷ Captain F. R. Sedgwick, *The Russo-Japanese War on Land: A Brief Account of the Strategy and Major Tactics of the War* (Foster Groom & Co., 1906) page 59.

defeated force in hopeless ruin from the field. The defeated Russians retired from their Shaho [*sic*] position over a difficult river, the Hunho, without any serious losses, and Kuropatkin could even with some semblance of truth pretend that his was a strategic retirement... So tired out by the fighting were the Japanese, that, though a few advanced troops followed close on the heels of the Russians, the main body only advanced slowly... From the 23rd a new standstill, only broken by unimportant outpost and patrol skirmishing, fell upon the theatre of war⁴¹⁸.

The vexing issue of how to classify Liao-yang was seen even within the two versions of the British Official History. The 1910 discussion notes, following the German interpretation, that

although the trophies of victory were very few, the battle of Liao-yang had ended with a splendid tactical triumph for the Japanese... The importance of this battle can hardly be exaggerated. By their victory the Japanese triumphantly vindicated their strategy, and extricated themselves from a position which at one time threatened to prove extremely dangerous⁴¹⁹.

Yet two years later, the 1912 (Naval and Military) history acknowledged that

it may be considered, indeed it has been urged, that Liao-yang cannot really be counted as a Russian defeat. The Russians beat off all the attacks on the Advanced and Main Positions; they withdrew their forces successfully and in good order to Mukden; and few were the trophies that fell into Japanese hands⁴²⁰.

⁴¹⁸ Captain F. R. Sedgwick, *The Russo-Japanese War on Land: A Brief Account of the Strategy and Major Tactics of the War* (Foster Groom & Co, 1906) page 113-114

⁴¹⁹ Great Britain Committee of the Imperial Defence (Historical Section) *Official History of the Russo-Japanese War Part IV: Liao Yang* (His Majesty's Stationary Office 1910) page 115

⁴²⁰ Great Britain Committee of the Imperial Defence (Historical Section) *Official History (Naval and Military) of the Russo-Japanese War Volume 2: Liao-Yang, the Sha Ho, Port Arthur* (His Majesty's Stationary Office 1912) page 177. The parallel use of the phrase pertaining to few "trophies of victory", albeit framed by very different modifiers, is interesting.

The history goes on to argue that the extreme position, that it was a Russian victory, or even a “tactical reverse which can be claimed as a strategical success”⁴²¹ were flawed as well, and that the battle was best viewed as a draw.

Liao-yang was a multi day battle, involving about four hundred thousand soldiers, resulting in nearly fifty thousand casualties, and it was the largest engagement up to that point in the war. But the inability of observers to agree on who won, how decisively, and why raises serious questions about rational Bayesian updating. The battle of Nan-shan, while somewhat smaller, raises more questions.

Nan-shan

The difficulty of actually drawing a conclusion, even from widely available data, was demonstrated throughout the war. Depending on the various metrics used to measure success, there were many different ways to interpret combat results. For example, at the Battle of Nan-shan, thirty five thousand Japanese attacked a force of four thousand four hundred Russians. By the time that the Russians retreated the Japanese had suffered four thousand two hundred casualties, the Russians one thousand four hundred (see chart below).

⁴²¹ Great Britain Committee of the Imperial Defence (Historical Section) *Official History (Naval and Military) of the Russo-Japanese War Volume 2: Liao-Yang, the Sha Ho, Port Arthur* (His Majesty's Stationary Office 1912) page 177

Chart 3 – 6 Metrics of the Battle of Nan-shan

	Battle of Nan-shan	
	Japanese	Russian
Soldiers Engaged	35,000	4,400
Ratio of Japanese:Russian Forces	7.955 : 1	
Casualties	4,200	1,400
Ratio of Japanese:Russian Casualties	3 : 1	
Casualties as a percent of engaged	12.0%	31.8%
Casualties inflicted per shooter	0.040	0.955

Rowan-Robinson looked at two factors in arguing in favor of a Japanese victory. First, the Japanese succeeded in capturing the ground over which the battle was fought. Second, the Japanese suffered a 12% loss (4,200/35,000), while the Russians suffered nearly 33% (1,400/4,400)⁴²². Yet were these the right metrics⁴²³?

The official narrative from the United States War Department characterized the Nan-shan action rather differently. Ignoring casualties altogether, the history noted that it was “mainly an artillery dual”, it went on to describe the mechanics of the dual, the favorable influence of naval gunfire for both sides, and the eventual silencing of Russian artillery before the line gave way⁴²⁴. Thus the casualties inflicted on the two rival infantry forces were not even worth mentioning, all that mattered was that the Japanese advanced after the battle.

⁴²² Major H Rowan-Robinson, *The Campaign of Liao-Yang* (Constable & Co., 1914) page 74.

⁴²³ The actual choice of metrics could itself be influenced by the biases of the actors, a problem that we will discuss later. See Dominic D. P. Johnson, and Dominic Tierney, *Failing to Win: Perceptions of Victory and Defeat in International Politics* (Harvard University Press, 2006)

⁴²⁴ United States War Department: General Staff. *The Epitome of the Russo Japanese War* (US Government Printing Office 1907) page 16. The whole discussion of the engagement takes place on this single page.

Similarly, Lieutenant-Colonel Haldane, observing for the British General Staff, argued that Nan-shan was a clear Japanese victory, and one that proved the importance of moral factors. After describing a series of failed charges against the Russian position, and noting the precarious state of Japanese ammunition supplies, he noted how General Oku orders one last assault, one that breaks the Russian lines.

The battle had lasted sixteen hours, and during all that time the Japanese soldiers had lain in the open under a terrific fire, but their losses -4,300 killed and wounded –were not excessive... Nan-shan exemplifies what determination on the part of the commander and self-sacrificing bravery on that of the men can do. To all intents and purpose the battle was lost, but the fine qualities of the General and the men turned defeat into victory⁴²⁵.

While undoubtedly impressed by the capture, Haldane does not compare losses to Russian losses, nor does he compare quantities of troops engaged. Instead his metric is that the Russians quit the field.

The Japanese had only two second rate divisions back in Japan, while Russia had undeployed armies spread over European Russia, the Caucasus, and the Russian interior. The Japanese had fully mobilized their population for military service, whereas the Russians were never fully mobilized. Thus, argued some, the Japanese could ill afford the loss of 4,200 while inflicting only 1,400, a loss exchange ratio of 3:1⁴²⁶. Another way of looking at it was

⁴²⁵ Haldane report “Operations of the 2nd Japanese Army, from 1st May to 15th June 1904, Including the Battles of Nanshan and Teh-Li-sz”, 5 September 1904,. Great Britain General Staff: War Office *The Russo-Japanese War: Reports from British Officers Attached to the Japanese and Russian Forces in the Field* **Marked Confidential** (volume one, no publisher, 1905) page 92. His comment that losses were not “excessive” is intriguing, but was not quantified.

⁴²⁶ This loss-exchange interpretation is used in Lieutenant-Colonel A. H. Burne, *The Liao-Yang Campaign* (William Clowes, 1936) page 46-47. Burne goes further, arguing that most of the Russian casualties were inflicted during their withdrawal from the field. In the actual attack the loss exchange

efficiency. Despite being outnumbered nearly 8:1, The 4,400 Russians inflicted casualties of 4,200, or nearly one attacker casualty per defender. Yet the 35,000 attackers were able to inflict casualties on only 1,400 defenders, or at a rate of engaging twenty five shooters for each defender casualty. Even broad agreement about the value of the numbers did not guarantee agreement about the interpretation of those numbers.

Lieutenant Colonel Burne believed that the Japanese were beaten in battle at Nan-shan, and noted the repeated failure of attacks, even though the Japanese held 8:1 superiority in men and a superiority in artillery.

In spite of a wonderful display of bravery on the part of their infantry and of supporting on the part of their ships, the Japanese attacks everywhere broke down in front of the Russian wire, with enormous losses... [The Japanese General] reiterated orders to renew the attack. It was all he could do...Almost simultaneously an order reached the defenders from Stoessel to abandon the position⁴²⁷.

Lieutenant-Colonel Schuyler discusses the casualties inflicted on the Russians at the Sha-ho and Liao-yang. However when he speaks of retreats being costly, he is speaking specifically about retreats following attacks, i.e., the withdrawal from partially exposed positions while

ratio was 10:1 in favor of the Russians, but the Japanese caught up by firing on Russians that retreated, and thus lost the benefits of entrenchment, cover, and concealment. Rowan-Robinson also acknowledges this change in casualty rates during the phases. Most reports agree that the Russians lost between 900-1200 of their casualties during the retreat from the position at Nan-shan, suggesting at most 500 casualties, and as few as 200, against which must be set the bulk of the Japanese 4,400. However artificially truncating the battle by tactical phase, when there is no corresponding pause in action, could generate accusations of bias against the analyst. Note that Biddle works around this issue in his analysis by differentiating between casualties inflicted on units that are moving in the open and those that are under the benefits of cover and concealment.

⁴²⁷ Lieutenant-Colonel A. H. Burne, *The Liao-Yang Campaign* (William Clowes, 1936) page 46. General Stoessel was back in Port Arthur, and was the senior officer. Command of the Russians at Nan-shan was held by Colonel Tretyakov. Tretyakov would go on to distinguish himself by his tenacious defensive actions at 203 Meter Hill during the siege of Port Arthur. It is to be recalled that General Fock, also in Port Arthur, refused Tretyakov's repeated requests for resupply.

under fire⁴²⁸. This view is repeated again at Nan-shan, where most of the casualties inflicted on the Russians are during their unsupported retreat following Stoessel and Fock's orders to fall back to Port Arthur.

Captain Judson went so far as to argue that Russia was not actually beaten in the Russo-Japanese War, but that both sides reached a point of mutual exhaustion following Mukden and Tsushima. He argued that

the whole campaign was a series of tactical defeats for the Russians. Nevertheless it yielded nothing to Japan but a few square miles of a Chinese province. When Mukden fell and Rozhevski's fleet was destroyed, the war was logically ended. The Japanese could not go much farther forward, and the Russians could not hope to retake the Liao Tung Peninsula [*sic*]. Peace became inevitable, but rather because an impasse had been reached than by reason of Japanese success. Each nation had pressing need to recognize this state of affairs, for Russia must be free to deal with an acute political situation and Japan must avoid bankruptcy⁴²⁹.

Conclusion: Military Aspects of the Russo-Japanese War

The Bayesian theory has problems explaining the lessons drawn by observers and commentators from the Russo-Japanese War. On questions of fact, such as whether the ground in Manchuria was suitable for cavalry, or whether the Japanese conformed to German regulation infantry formations throughout the war, the observers disagreed. Even when they agreed about the facts, however, they sometimes disagreed about the lesson to be

⁴²⁸ Walter Schuyler report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 1) (US Government Printing Office, September 1906) page 127-28.

⁴²⁹ William V. Judson report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 3) (US Government Printing Office, 1907) pages 174-175.

drawn from those facts. Different analysts picked different metrics out from the same set, and used those metrics to draw divergent conclusions.

Yet the military aspects of the Russo-Japanese War were only part of the overall story. In addition to advances in land warfare, the turn of the century saw tremendous advances in naval technology and theory. Many neutrals sent observers to specifically focus on the lessons to be drawn from naval warfare, and these observers were not disappointed. There were two major battleship engagements, a cruiser engagement, and numerous smaller actions. The following sections will explore the explanatory power of a Bayesian approach in learning about developments in naval warfare.

Naval Aspects of the Russo-Japanese War

The naval aspects of the Russo-Japanese War fall into two categories. First, commentators discussed broad aspects of naval strategy, examining whether fleets should be employed against military or commercial targets, whether and how smaller fleets could affect the outcome of war when faced with larger fleets, and whether fleets were better advised to seek the decisive battle or remain undamaged, and thus “in being”, i.e., representing a constant deterrent against the enemy’s own offensive use of their fleet. This discussion largely involved naval observers, but some military commentators weighed in as well.

The second broad area of naval analysis was naval tactics and design. This explored the detailed effects of technological changes in gunnery, surface launched torpedoes, mines, propulsion, armor, armament, and signaling and their effects on the conduct of naval battles.

The conduct of these naval battles, in turn, influenced questions of capital ship design. This technical discussion only involved naval observers and commentators, and there were fewer naval observers than military observers. However, given the historical period of the Russo-Japanese War, some of the commentators were heavyweights in naval strategy and tactics. In the United States Alfred Thayer Mahan was lecturing at the Naval War College, publishing articles, and advising President Theodore Roosevelt on naval affairs. Across the Atlantic Ocean Admiral Sir John “Jackie” Fisher was beginning construction of *HMS Dreadnought*, Sir Julian Corbett was composing his own theory of naval strategy, and the aging Sir William White continued to advise on ship design. These were heady times for naval theory, and the Russo-Japanese War attracted significant attention.

Naval Strategy

There were two big strategic debates taking place in 1904-1905. The first was between advocates of the *guerre de course*, or commerce raiding approach and those who advocated concentration against naval targets. The second was between those who advocated concentration for decisive battlefleet action and those who advocated the “risk theory” of naval power, which focused on the ability of a navy to hold another navy hostage by avoiding battle, but constantly threatening battle. The views expressed by the observers are shown below.

Chart 3 – 7 Summary of Naval Strategy Observations

Country	Service	Author	Title	Official	Dates	Strategy	
						Raid	Risk
USA	Navy	McCully	Reports	Yes	1906	No	
USA	Navy	Mahan	Size of Battleships Naval Strategy	No	1907 1911 1908-12	No	No
USA	Navy	Mahan	Naval Strategy	No	1911	No	No
USA	Navy	Sims	Inherent Tactical	No	1907		
GB	Navy	Pakenham	Reports	Yes	1904-05	No	Yes
GB	Navy	Jackson	Reports	Yes	1904-05		
GB	Navy	Custance Barfleur	Ship of the Line Naval Policy	No	1907 1912	No	No
GB	Staff	Staff	Official History	Yes	1910	No	No
GB	Civilian	Corbett	Maritime Ops	Yes	1914	No	Yes

Yes = 0	Yes = 2
No = 7	No = 4

Raid: Was a *guerre de course* raiding strategy effective?

Risk: Was a "risk strategy" effective

Admiral Sir Reginald Custance, Director of Naval Intelligence, argued that the Russian naval plans were flawed due to their focus on raiding and diversionary actions rather than main battlefleet engagement, and these flaws doomed the Russian war effort. The Russian plan called for

a main body, based on Port Arthur, to bar access to the Yellow Sea, and prevent a disembarkation on the west coast of Korea, with a detachment based on Vladivostock [sic] to act on the enemy's communications, to raid his coasts, and thus to draw away part of the enemy's fleet from the Gulfs of Korea and Pechili... It will be noted that the plan deals chiefly with ulterior objects, and lays little or no stress on the pressing need to defeat the Japanese fleet, on which all else turned, and to which all efforts should have been directed⁴³⁰.

Captain Alfred Thayer Mahan's views on the Russo-Japanese War are of no surprise to those who know his work. On the Russian defeat he stated bluntly that "it was the cardinal, and in

⁴³⁰ Admiral Sir Reginald Custance, *The Ship of the Line in Battle* (William Blackwood & Sons, 1912) page 110.

view of the aggregate size of their navy, most discreditable feature of the campaign as a whole, on their part, that no decided attempt was ever made to destroy the Japanese fleet by sheer hard fighting”⁴³¹. And later in Newport Rhode Island he advised his War College students that

everything depended upon the command of the sea; and command of the sea could be obtained only by the destruction of the enemy’s fleet. That destruction, again, could be effected only by battle, by the cannon; by bringing the fleets into collision under the circumstances of greatest advantage for the party seeking the encounter⁴³²

Pakenham felt that raiding was far inferior to battle fleet action, noting in his discussion of Jessen’s activities out of Vladivostok that “Mahan’s appreciation of these raids as annoyances without effect upon the course of the war, only executed at a disproportionately great risk to the raiders, leaves nothing to be added”⁴³³. Custance argued that raiding was not only a secondary objective, but that it would be harder to raid in the future because more powerful raiding vessels prompted the defender to cluster his merchant fleets with heavy escorts, causing raiders to themselves cluster. The subsequent amalgamation of individual raiders into squadrons would lead to a *de facto* battlefleet encounter before the raiding phase.

The armoured cruisers are now so large and powerful, and form so great a proportion of the available fighting strength, that both sides will be obliged to concentrate both battleships and armoured cruisers. If the concentrated squadrons are nearly equal in fighting power they will seek each other and fight, as occurred during the manoeuvres of 1901. If they are not equal, and both remain in the same

⁴³¹ Captain Alfred Thayer Mahan, “Reflections, Historic and Other, Suggested by the Battle of the Japan Sea” Congressional Testimony, Committee on Naval Affairs 14 January 1907, 59th Congress, 2nd Session, Document 213, bound as *Size of Battle Ships* (no date, no publisher) page 4.

⁴³² Captain Alfred Thayer Mahan, “Discussion of the Russo-Japanese War” in *Naval Strategy: Compared and Contrasted with the Principles and Practice of Military Operations on Land, Lectures Delivered at the U S Naval War College, Newport, R I, between the years 1887 and 1911* (Little Brown & Company, 1911) page 418.

⁴³³ Pakenham report 17 July 1904, Great Britain Admiralty Intelligence Office *The Russo-Japanese War 1904-1905: Reports from Naval Attachés* (republished by Battery Press, no date), page 118.

waters, they will meet sooner or later by accident, as occurred when the *Russia* [sic], *Gromoboi*, and *Rurik* were intercepted by Admiral Kamimura, and the last named ship was sunk. If the fight is to be avoided, the weaker force must either remain in port, or move into more distant waters⁴³⁴

Sir Julian Corbett also attacked the raiding strategy, not merely for its lack of strategic effect, but also for the effect that raiding may have on engendering the belligerency of neutral maritime powers. The auxiliary Russian cruisers *Smolensk* and *Peterburg* conducted some raiding operations far from the Japanese seat of power, in the Red Sea. The capture of the neutral ship *Malacca* “caused a violent outburst of feeling in England, and that the British Government had not only demanded her immediate release, but had protested against the whole proceedings of the cruisers as illegal”⁴³⁵. This event, coupled with the Dogger Bank Incident, very nearly precipitated a war with Great Britain⁴³⁶. The Russians withdrew the raiders, causing Corbett to note that

under every circumstance of humiliation –derided by the natives in the Canal and kept under observation from point to point by British cruisers –their ill-advised cruise came to an end. And the only purposes it had served was to give one more blow to the naval prestige of Russia and to furnish an example of what can be expected from such auxiliary commerce destroyers under modern conditions⁴³⁷

⁴³⁴ Admiral Sir Reginald Custance (under the pseudonym “Barfleur”) *Naval Policy: A Plea for the Study of War* (William Blackwood & Sons, 1907) pages 124-125.

⁴³⁵ Sir Julian Corbett, *Maritime Operations in the Russo-Japanese War 1904-1905*, Volume II, (originally a confidential publication of the Committee on Imperial Defence, 1914, republished by US Naval Institute Press, 1994) page 19.

⁴³⁶ When the Russian Baltic Fleet first set out for the Far East, off the Denmark coast they mistook some English fishing trawlers for Japanese torpedo boats, and sank them. This prompted the dispatch of a battleforce under Admiral Lord Charles Beresford who “proposed, on the grounds of chivalry, to attack it [the Russian fleet] with only half of his available ships”. While Beresford never had a chance to fire, he shadowed the Russians through the Bay of Biscay. As the Russians sloppily practiced naval maneuvers Beresford taunted them by having his ships do the same maneuvers more rapidly, and far more tightly, on the horizon within sight of the Russians. See Andrew Gordon, *The Rules of the Game: Jutland and British Naval Command* (John Murray, 1996) page 322.

⁴³⁷ Sir Julian Corbett, *Maritime Operations in the Russo-Japanese War 1904-1905*, Volume II, (originally a confidential publication of the Committee on Imperial Defence, 1914, republished by US Naval Institute Press, 1994) page 25.

Mahan attacked the Fleet-in-Being theory. He relayed how before Tsushima, Rozhdestvensky (the Russian admiral) said

if twenty only of the numbers under his command reached Vladivostok, the Japanese communications would be seriously endangered. This is clear 'Fleet in Being' theory, and quite undiluted; for it expresses the extreme view that the presence of a strong force, even though inferior, near the scene of operations, will produce a momentous effect upon the enemy's action. The extreme school has gone so far as to argue that it will stop an expedition; or should do so, if the enemy be wise⁴³⁸.

By pursuing this "double object" of trying to reach Vladivostok, while simultaneously trying to prepare for the decisive battlefleet encounter, the Russians insured that they would achieve neither. "A fleet is half beaten already when it goes into battle with one eye upon something else than fighting"⁴³⁹.

The British official history also commented unfavorably on the fleet-in-being approach. They acknowledged that the Russian strategy had some benefits, but unless it eventually transitioned into a decisive battlefleet encounter it was destined to be an incomplete, and ultimately failing, strategic approach. Noting that

a detachment may be fairly said to justify its existence if it keeps employed a larger detachment of the enemy, and thereby increases the chance of success at the decisive points... The mere existence of the Russian fleet constituted a threat, which was sufficiently formidable to attract four divisions of the Japanese army to the Kuantung Peninsula, at a time when they were sorely needed elsewhere. It cannot,

⁴³⁸ Captain Alfred Thayer Mahan, *Naval Strategy: Compared and Contrasted with the Principles and Practice of Military Operations on Land, Lectures Delivered at the U S Naval War College, Newport, R I, between the years 1887 and 1911* (Little Brown & Company, 1911) page 398.

⁴³⁹ Captain Alfred Thayer Mahan, *Naval Strategy: Compared and Contrasted with the Principles and Practice of Military Operations on Land, Lectures Delivered at the U S Naval War College, Newport, R I, between the years 1887 and 1911* (Little Brown & Company, 1911) page 418.

therefore, be said that the fleet rendered no service, but sooner or later the policy which was adopted was bound to fail⁴⁴⁰.

The Official History argued that fleet-in-being had some utility for achieving disproportional reduction in forces, but only if it were followed up with decisive fleet action taking advantage of the reduction in forces. Or, to put it in somewhat less complex terms, it was a strategy of deterrence that proved ineffective for warfighting when deterrence broke down.

Sir Julian Corbett, in his two volume classified history of the Russo-Japanese War for the Admiralty was more circumspect. While noting that in some circumstances fighting the decisive naval battle is the right object, in other circumstances *preserving* the ability to fight can be more important. For the Japanese in the Russo-Japanese War “every opportunity for active minor operations was to be seized for extending the area of control, but no offensive movement must be undertaken which risked the permanent control of the vital zone”⁴⁴¹.

Corbett’s comments were also echoed by Pakenham, who in comparing Nelson with Togo noticed that

throughout the war, the Japanese Admiral has been fighting with a rope round his neck and the scope of his activities has been limited by a stringent necessity from which he could not escape... The same law bound them both. The main force of the enemy had to be met and beaten. Here, however, the resemblance ended.

⁴⁴⁰ Great Britain Committee of the Imperial Defence (Historical Section) *Official History (Naval and Military) of the Russo-Japanese War Volume 1: To August 1904* (His Majesty’s Stationary Office 1910) pages 394-395.

⁴⁴¹ Sir Julian Corbett, *Maritime Operations in the Russo-Japanese War 1904-1905*, Volume II, (originally a confidential publication of the Committee on Imperial Defence, 1914, republished by US Naval Institute Press, 1994) page 391.

Neither Nelson nor his antagonist were expected to win victories without loss of ships, but this was the task set the latest comer among maritime celebrities⁴⁴².

These results show convergence in the issue of *guerre de course*, all commentators concluding that it was an ineffective use of naval power. Yet on the issue of the risk strategy there was a divergence, with Pakenham and Corbett arguing that Togo had to be primarily concerned with the protection of his fleet, as the loss of his fleet was the only certain way of ending the war unfavorably for the Japanese. Yet Togo had to balance this concern with an interest towards eventually destroying the Russian fleet⁴⁴³. In contrast, Mahan explicitly rejected such a “risk strategy” approach and argued for decisive naval action as the only way of winning the war.

Aspects of Naval Tactics and Design in the Russo-Japanese War

There were a number of debates among the major European navies pertaining to aspects of naval warfare prior to the Russo-Japanese War. These included disputes about whether longer range and speed gave one side a decisive tactical advantage, as speed would allow them to control distance, and range would allow them to fire without risk of reply. There were debates about the effectiveness of naval mines and surface fired torpedoes. There was a debate about whether it was wise to continue to grow the capital ship, or instead build multiple ships. Finally, there was a debate whether a mixed armament of large and medium caliber guns, which was able to generate a higher volume of fire, was inferior to an armament

⁴⁴² Pakenham report 17 August 1904, Great Britain Admiralty Intelligence Office *The Russo-Japanese War 1904-1905: Reports from Naval Attachés* (republished by Battery Press, no date), page 159.

⁴⁴³ Corbett suggested that much of this would be accomplished by destroying Port Arthur from the land side.

of “all big guns”, which could pack a more destructive punch. The naval observers discussed all of these issues in their reports. A summary of their findings is shown below.

Chart 3 – 8 Summary of Naval Surface Warfare Results

Country	Service	Author	Title	Official	Dates	Surface Warfare Characteristics							
						Volume	Armam	Range	Size	Speed	Mine	Torped	Damage
USA	Navy	McCully	Reports	Yes	1906	Yes	Mixed		No	No	Yes	No	Morale
USA	Navy	Mahan	Size of Battleships	No	1907	Yes	Mixed	Short	No	No	Yes	No	Morale
			Naval Strategy		1911								
			Correspondence		1908-12								
USA	Navy	Mahan	Naval Strategy	No	1911	Yes	Mixed		No	No	Yes	No	
USA	Navy	Sims	Inherent Tactical	No	1907	No	ABG	Long	Yes	Yes	Yes		Physical
GB	Navy	Pakenham	Reports	Yes	1904-05		ABG	Both	Yes	Yes	Yes	No	Physical
GB	Navy	Jackson	Reports	Yes	1904-05	No	ABG	Long		Yes	Yes	No	
GB	Navy	Custance Barfleur	Ship of the Line Naval Policy	No	1912	Yes	Mixed	Short	No	No	Yes	No	
GB	Staff	Staff	Official History	Yes	1910	No	ABG	Both		Yes	Yes	No	Physical
GB	Civilian	Corbett	Maritime Ops	Yes	1914			Long		Yes	Yes	No	Physical

Volume: Is volume of fire the critical attribute of naval gunfire?

Armament: Mixed battery or "all big gun" (ABG)?

Range: Ideal range at which capital ships should engage

Size: Should capital ships be increased in size?

Speed: Is speed an important tactical advantage?

Mine: Was the mine an important weapon?

Torpedo: Was the surface fired torpedo an important weapon?

Damage: Was it more important to strike the morale of the crew or to inflict physical damage?

The Torpedo Threat

There was strong convergence on the issue of the torpedo threat. Observers unanimously agreed that the surface fired torpedo was ineffective. Moreover, its inclusion on both small and capital ships wasted resources that could otherwise be given over to guns.

McCully commented that “during the entire war torpedo boats did little in their role as such to justify their existence”⁴⁴⁴. He noted that their shallow draft made them useful as a *gunfire* platform in a coastal support role, and that they were also useful as communications relays

⁴⁴⁴ Lieutenant Commander Newton A. McCully, *The McCully Report: The Russo-Japanese War, 1904-1905* (US Naval Institute Press, 1977- reprint of May 1906 Memorandum prepared for the US Secretary of the Navy) page 246.

and scouts during naval battles, but as weapons they performed in a surprisingly poor manner.

On the subject of torpedo attacks, Captain Mahan wrote in a public letter that “now and again a great man, or a great ship, may be so struck; but neither nations nor fleets are thus destroyed. It is the concentrated power which can come out into the open that wins in the end, and this the Japanese battle fleet has proved”⁴⁴⁵. He thus acceded to the possibility that someday a torpedo might manage to inflict some damage, but that its damage would not effect the outcome of a war. The outcome of a war would be decided by the gunfire of capital ships.

Admiral Sir Reginald Custance, Director of Naval Intelligence, was highly critical of the torpedo, noting that “the Whitehead torpedo failed during the period of the Japanese War under review. The candid mind can hardly resist the conclusion that in a ship of the line it was then of little value, and that in the destroyer and torpedo-boat its efficiency was over-rated”⁴⁴⁶. Custance constructed a chart of Whitehead torpedo results, noting that of the 450 torpedoes known to have been fired by both sides, exactly one moving target was hit. At the battle of the Yellow Sea the Japanese hit one of their own torpedo boats, without causing much damage. There were additional non-critical hits at ships at anchor, including the Russian Port Arthur fleet attacked before the outbreak of war. There were also hits on

⁴⁴⁵ Captain Alfred Thayer Mahan “The Probability of the Survival of the Battleship: Captain Mahan’s Conclusions,” *New York Sun*, 11 May 1904, reproduced in *Letters and Papers of Alfred Thayer Mahan, Volume III: 1902-1914*, edited by Robert Seager III and Doris D. Maguire (US Naval Institute Press, 1975) page 93

⁴⁴⁶ Admiral Sir Reginald Custance, *The Ship of the Line in Battle* (William Blackwood & Sons, 1912) page 178

disarmed stationary hulks after the conclusion of the gun battles at Ulsan and Tsushima. The Russians managed to hit a stationary block ship that was being sunk by the Japanese to try and block the channel out of Port Arthur. In none of these instances did the hits result in the destruction of the target⁴⁴⁷. Custance argued that even small surface combatants were better served by guns, rather than torpedoes. In discussing Russian anti-mining operations outside of Port Arthur, he notes that the Russian destroyers were disadvantaged by having a single forward mounted 12-pound gun, as opposed to Japanese destroyers which had both forward and rear mounted 12-pounders.

The destroyer had found its true role –that for which it was designed –viz., to control the inshore area. Its gun armament here was found to be more important than its torpedo equipment... The loss of gun power caused by adding torpedoes can be seen by considering weights for the original 30-knot boat. [chart omitted] This indicates that by omitting the torpedoes, two 12-pounders and six 6-pounders could have been carried instead of one 12-pounder and five 6-pounders, which means that the broadside would have been stronger by one 12-pounder⁴⁴⁸.

Custance recognized the threat posed by mines, and argued that gun armed destroyers were the best way of keeping minelayers at bay, or of keeping mine sweepers from clearing channels. It was the gun, and not the torpedo, which made the destroyer lethal to minelayers and minesweepers.

Like others, the British Official History agreed that

the most striking minor feature is the complete failure of their [Japanese] torpedo craft... Between eighty and ninety torpedoes were fired during the night [of Tsushima] yet not more than five or six hits were made⁴⁴⁹. These figures speak for

⁴⁴⁷ Custance, *The Ship of the Line in Battle (op cit)*, derived from data presented on Table XIV “Whitehead Torpedo War Results” page 213.

⁴⁴⁸ Custance, *The Ship of the Line in Battle (op cit)* pages 126-127.

⁴⁴⁹ As the history notes, these hits were against stationary, disarmed, and battered Russian ships.

themselves, and are all the more noteworthy since the training of the Japanese was thorough and their efficiency remarkable⁴⁵⁰.

Notably this conclusion was reached *after* the First World War, when the submarine fired torpedo had proven itself deadly to commercial and naval ships.

We actually can see Bayesian adjustment take place in the writings of British observer Captain Pakenham, who was initially skeptical, but somewhat open minded about the possible effects of the torpedo, writing as late as September 1904 that “both ram⁴⁵¹ and torpedo, as adjuncts to the offensive of big ships, are now trembling on the brink of abolition. As now arranged, the new Japanese cruisers are to have no rams, and the trend of opinion seems to be against the supply of a torpedo armament, either above or below the water. There can be no doubt that the influence of the later weapon has already been felt in keeping the ships apart, but there has not yet been an instance in which one has been fired”⁴⁵². Yet by the battle of Tsushima Pakenham’s position against the torpedo had

⁴⁵⁰ Great Britain Committee of the Imperial Defence (Historical Section) *Official History (Naval and Military) of the Russo-Japanese War Volume 3: San-De-Pu, Mukden, The Sea of Japan* (His Majesty’s Stationary Office 1920) page 806.

⁴⁵¹ While ramming may seem quaint to modern readers, the last major naval engagement between great powers was the Battle of Lissa between Austria and Italy in 1866, in which Austria triumphed by ramming Italian ships. Prior to the Spanish American War some projected ramming would again be an important naval tactic. After the US naval victories against the Spanish, most felt that ramming was unlikely to play much of a role, but the question lingered until the Russo-Japanese War. H. W. Wilson, *Battleships in Action* (two volumes, Sampson Low, Marston & Co Ltd, 1926), volume one, pages 41-58.

⁴⁵² Pakenham report 28 September 1904, Great Britain Admiralty Intelligence Office *The Russo-Japanese War 1904-1905: Reports from Naval Attachés* (republished by Battery Press, no date), page 207.

hardened, as he decried the weapon as “ineffective” even against ships entirely immobilized and disarmed by gunfire⁴⁵³.

The Tactical Benefit of Superior Speed

There was no convergence with respect to the tactical benefits of superior speed, with the observers evenly split about the importance of speed.

Commander Newton McCully, USN, argued that superior speed could not be harnessed to control the engagements except in exceptional circumstances. Commenting on Kamimura’s pursuit of Jessen during the battle of Ulsan, the “repeated failure of superior squadron of four armored cruisers of 17 knots speed, assisted by numerous other vessels, to keep in touch with inferior squadron of three weaker armored cruisers steaming 13 knots, after they were once sighted, seems inexplicable”⁴⁵⁴. McCully attributed this to the desire to concentrate on the slowest, and already most damaged ship, *Rurik*, rather than pursue the fleeing *Gromoboi* and *Rossija*.

In regards to speed, Admiral Sir Reginald Custance was blistering and direct in his views. First, he discussed the high speed armored cruiser. Speed was necessary to capture and sink merchant shipping, but such a role was beneath a ship of the line. The Russians hoped that the superior speed of their armored cruisers would allow them to escape attack by Japanese

⁴⁵³ Pakenham report 16 entitled “The Battle of the Sea of Japan” no date, Great Britain Admiralty Intelligence Office *The Russo-Japanese War 1904-1905: Reports from Naval Attachés* (republished by Battery Press, no date), page 373.

⁴⁵⁴ McCully, *The McCully Report* (*op cit*) page 244

battleships, but “how can a warlike enterprise be expected from men whose chief idea is to run away and avoid fighting?”⁴⁵⁵. The armored cruisers were thus wasted resources, unable by design to fight in the line and only able to take on an indecisive role in the war. As for the battleships, Custance argued that tactically superior speed was irrelevant, writing on Tsushima that “the study of the battle supplies strong evidence that the Japanese victory was due to superior skill in tactics and not to superior speed”⁴⁵⁶.

Custance went further and used the Russo-Japanese War to argue that the various speed and armor based distinctions between specialized capital ships was counterproductive, and that the war proved that the only valid distinction was between capital ships and other surface combatants. Thus the armament, and only the armament, was what differentiated the capital ship from lesser ships.

It is evidently proper that the classification of warships should depend primarily on the military use to which they are put rather than on the characteristics of their construction. The terms ‘battleship’ and ‘cruiser’ do not draw any such distinction, since all warships are built for battle, and all cruise. The additional words ‘armoured’ and ‘protected’ only indicate details of construction, and are misleading from a military point of view. The term ‘battle cruiser’ shows the present confusion of thought, and the necessity for a scientific nomenclature. The ships included as ‘of the line’ are the battleships and armoured cruisers actually ‘in the line’ during the general actions of the war.⁴⁵⁷

⁴⁵⁵ Custance, *The Ship of the Line in Battle* (op cit, 1912) page 157

⁴⁵⁶ Admiral Sir Reginald Custance (under the pseudonym “Barfleur”) “The Battle of Tsu Shima,” *Blackwood’s Magazine* February 1906, reprinted in *Naval Policy: A Plea for the Study of War* (William Blackwood & Sons, 1907) page 181

⁴⁵⁷ Custance, *The Ship of the Line in Battle* (op cit, 1912) page 108

Captain Alfred Thayer Mahan himself wrote on the subject of speed as derived from the actions at Tsushima. He argued that a small advantage in speed was of no advantage tactically. The tactics adopted by Togo

preserved to himself interior lines of movement –shorter distances to cover – whatever course the Russians might take, unless they retreated. That is, he secured for himself the certainty of bringing the enemy in battle, quite irrespective of any superiority of speed on his part... Not only would they draw together but the Japanese, having the interior line, would draw ahead at their discretion, throwing the Russian broadsides more and more out of action. Further, in order to overcome this disadvantage, the Russians would need a speed of 14 knots to a Japanese 10, or 17 to a Japanese 12 –a difference of speed beyond that contemplated as possible in clean bottomed ships by either the advocates or opponents of very high speed in battleships⁴⁵⁸.

Furthermore, Mahan argued that in any *fleet* action, and all decisive actions were *fleet* actions, there would always be older and slower ships in formation. In order to maintain concentration of fire the fleet would have to conform to the speed of the slowest ship. Thus the admiral who placed an emphasis on speed would have to choose between fragmenting his fleet or cutting speed. If speed were the only advantage the admiral brought to the fight, and had been purchased by trading away firepower or armor, he would face an intractable dilemma.

Mahan went still further with this line of argumentation, referencing the action off Ulsan. He noticed that once *Rurik*, already the oldest and slowest ship, was wounded her speed dropped still further. Kamimura had to choose between sinking *Rurik* and chasing the rest of the Russian squadron, possibly without inflicting further damage while risking his own

⁴⁵⁸ Captain Alfred Thayer Mahan, “Reflections, Historic and Other, Suggested by the Battle of the Japan Sea” Congressional Testimony, Committee on Naval Affairs 14 January 1907, 59th Congress, 2nd Session, Document 213, bound as *Size of Battle Ships* (no date, no publisher) page 3

ships, and possibly letting *Rurik* limp away⁴⁵⁹. Kamimura's vaunted superior speed couldn't come in to play. The tendency of the slowest ships to be wounded first, and thus become even slower, would characterize fleet engagements, and very quickly bring speeds down from the stated maximum of the design⁴⁶⁰. Furthermore, even if Yessen had had the speed advantage, he would have had to slow to protect *Rurik*, or maintain speed and leave *Rurik* to her fate, thus ending the action in the same way.

Lieutenant Commander (later Admiral) William Sims argued that Tsushima invalidated Mahan's claims about the lack of tactical relevance of slight speed advantages. In a detailed rebuttal of Mahan's public writings he argued deductively that speed gave one side control of the timing, range, closure rate, and compass bearing during an engagement.

It follows from the above that the slow fleet must always fight at a disadvantage even in the open sea, and that when restricted in its movements by the neighborhood of land or shoal water, by the necessity of protecting essential auxiliaries, by the necessity of reaching a definite point, or by the necessity of leaving a port in the face of a blockading enemy, it must inevitably be defeated even by a faster fleet of less power⁴⁶¹.

⁴⁵⁹ Captain Alfred Thayer Mahan, "Reflections, Historic and Other, Suggested by the Battle of the Japan Sea" Congressional Testimony, Committee on Naval Affairs 14 January 1907, 59th Congress, 2nd Session, Document 213, bound as *Size of Battle Ships* (no date, no publisher) page 5

⁴⁶⁰ The important damages, for Mahan, were to the funnels. Collapsing a funnel didn't just mean that smoke would obscure range-finding, but that the boilers would lose pressure. Pressure was speed. While incremental advantages in speed were not, according to Mahan, decisive, capital ships with excessively slow speed were easy targets, especially if they dropped out of formation. Captain Alfred Thayer Mahan, "Reflections, Historic and Other, Suggested by the Battle of the Japan Sea" Congressional Testimony, Committee on Naval Affairs 14 January 1907, 59th Congress, 2nd Session, Document 213, bound as *Size of Battle Ships* (no date, no publisher) page 16

⁴⁶¹ Lieutenant Commander William S. Sims, "The Inherent Tactical Qualities of All-Big-Gun, One Caliber Battle Ships of High Speed, Large Displacement and Gun Power" Congressional Testimony, Committee on Naval Affairs 14 January 1907, 59th Congress, 2nd Session, Document 213 bound as *Size of Battle Ships* (no date, no publisher)

He attacked Mahan's narration of the battle and his navigation calculations, and produced a set of his own calculations showing that at any given time superior Japanese speed allowed superior concentration under favorable firing conditions against the Russian fleet.

Sims' view was shared by Captain Jackson, of the Royal Navy, who was aboard one of the Japanese ships. Jackson noted that what he estimated to be a three knot difference between the Japanese and the Russians allowed Togo to conduct a series of closures and crosses against the most powerful Russian battleships at favorable angles, and he was very quickly able to reduce the Russian fleet's speed and firepower, at which point slower Japanese ships were able to close with and sink the Russians⁴⁶².

Capital Ship Armament

There was a lack of divergence also on the question of armament. Some commentators drew the lesson that the most devastating effects were from big guns, while smaller guns produced no effect against modern armored ships. Others held a more nuanced position. While the big gun was indeed more likely to sink a ship, actually sinking a ship was a rare event, and often took place after the battle was decided. Instead ships were beaten when the crew and commander became demoralized or panicked, and that was likely to happen when ships were subject to a high volume of rapid fire. Thus, while there existed a consensus on

⁴⁶² Jackson report 28 June 1905, Great Britain Admiralty Intelligence Office *The Russo-Japanese War 1904-1905: Reports from Naval Attachés* (republished by Battery Press, no date), pages 393-395 and plate 20. While Russia had twelve battleships in their fleet, the four battleships of the *Borodino* class and the *Oshyabya* were the most powerful. In the opening round of the battle *Oshyabya* was sunk and the *Borodino* class ship *Suvorov*, also serving as Admiral Rozhdestvensky's flagship, was heavily damaged.

the importance of the capital ship, there was no consensus about how, exactly, the capital ship was to be armed.

Even prior to Tsushima and the Battle of the Yellow Sea, the civilian Fred Jane noted with regards to battleships themselves

too little is yet known of the real facts of the war for many conclusions of value to be drawn; indeed, only one thing is as yet fully clear, and that is the importance of battleships. Russia's failure lay here... As a result, despite the extraordinary activity of the Russian cruiser *Bayan*, the naval war followed the exact course that any one cognizant of naval affairs could have predicted on February 10, 1904. Only the battleship can confer command of the sea⁴⁶³.

However, in commenting on secondary armament, Jane argues “two theories are at work here, and it will need a war to say which is better”⁴⁶⁴.

McCully argued that volume of fire meant more than big guns. “The evidence of the battles of February 9, August 10, and 14, 1904 if not also that of May 27, 1905, points rather to a superiority in a volume of fire from guns of 8” and below... volume of fire was always characteristic of Japanese attack on both sea and land”⁴⁶⁵. On the question of armament, Admiral Sir Reginald Custance examined Tsushima and argued that “the above results seem to indicate that the smaller gun is by no means to be neglected as an instrument for this purpose... Thus we see that whether we consider the difficulty of hitting or the comparative effect produced by shells of different calibres, there are very grave doubts whether batteries

⁴⁶³ Fred T. Jane, *The Imperial Japanese Navy* (W. Thacker & Co, 1904) page 357. Jane was a civilian, but like Lord Brassey, his commentary on naval affairs was voraciously consumed by naval professionals. His publishing house, Janes, today remains the leading open source authority on military, and especially naval, technologies.

⁴⁶⁴ Fred T. Jane, *The Imperial Japanese Navy* (W. Thacker & Co, 1904) page 185.

⁴⁶⁵ McCully, *The McCully Report: (op cit)* page 250.

of comparatively few large guns form the most effective armaments”⁴⁶⁶. In a piece for *Blackwood's Magazine* analyzing Tsushima, written under the pseudonym Barfleur, he made the same point. “The *Oshabya* was smothered under such a hail of explosions that she might well have been beaten in nine minutes, seeing that the *Varyag* was defeated in fourteen minutes by less than half the number of shells”⁴⁶⁷. This smothering fire demonstrated that the “great principle of dispersing the guns to concentrate their fire is emphasized and confirmed by the battle of Tsu Shima [*sic*]. This favours numbers rather than large dimensions, and is possibly at the back of the hesitation of America to follow our lead in increasing the size of battleships”⁴⁶⁸.

Mahan's view on armament was a clear affirmation of the mixed battery.

It has long been my own opinion that the so-called ‘secondary battery’ is really entitled to the name ‘primary,’ because its effect is exerted mainly on the personnel rather than the material of a vessel; and I am glad to find this view supported by the author of the article in *Blackwood*, though he does not use the same words⁴⁶⁹. Whatever the improvements in quickness of handling 12 inch guns, it can scarcely be that, with an equal aggregate weight of broadsides, they can rival in volume of fire the much greater number and more rapidly discharged pieces of smaller caliber; and when within the limits of useful perforation, volume of fire, multiplicity of

⁴⁶⁶ Custance *The Ship of the Line in Battle* (*op cit*) page 190.

⁴⁶⁷ Admiral Sir Reginald Custance (under the pseudonym “Barfleur”) “The Battle of Tsu Shima,” *Blackwood's Magazine* February 1906, reprinted in *Naval Policy: A Plea for the Study of War* (William Blackwood & Sons, 1907) page 173.

⁴⁶⁸ Admiral Sir Reginald Custance (under the pseudonym “Barfleur”) “The Battle of Tsu Shima,” (*op cit*) page 175.

⁴⁶⁹ Mahan provided no citation, but here Mahan is likely referring to Admiral Sir Reginald Custance, former Director of Naval Intelligence. Custance penned, under the pseudonym of Barfleur, “The Battle of Tsu Shima” for *Blackwood's Magazine* in February 1906. This piece has already been discussed, and his argument is along the lines that Mahan described. We know that Mahan was familiar with Sir Reginald's *nom de plume*, and it was likely that Mahan's readers were as well.

projectiles, is better than individual weight of projectile, because it gives a greater number of hits⁴⁷⁰.

In addition to his allusion to Custance, Mahan brings in the testimony of other naval greats.

As stated by Sir William White⁴⁷¹ in a recent lecture, the Russians declared they were blinded by the volume of shells from the Japanese guns. This result being upon the personnel, goes far to establish the actual superiority of the secondary battery, in which the Russians had little more than half the number possessed by the enemy, while in the heavier calibers they had more than double⁴⁷².

White and Mahan revisited the point in 1910, at the Eighteenth Annual Meeting of the Society of Naval Architects and Marine Engineers⁴⁷³.

Pakenham, in a lengthy discussion about volume versus big guns, came down strongly in favor of the all big gun design.

Every war brings with it new lessons... and if the actions of the larger primary ships are examined it will be seen that guns of a calibre less than 8 inches have seldom or ever been usefully fired... As pointed out elsewhere, the secondary ships have also derived their importance, either as threatening other ships or as aids to the military, from the relatively heavy nature of a part of their armament, rather than from the rapidity of fire... The possession of one or two guns heavy in proportion to her size gives an advantage which no ship can afford to forgo. Even in the short-range night

⁴⁷⁰ Captain Alfred Thayer Mahan, "Reflections, Historic and Other, Suggested by the Battle of the Japan Sea" Congressional Testimony, Committee on Naval Affairs 14 January 1907, 59th Congress, 2nd Session, Document 213, bound as *Size of Battle Ships* (no date, no publisher) page 10.

⁴⁷¹ Sir William Henry White was the foremost naval architect serving the Royal Navy, and had just retired as Chief Constructor. Prior to working for the Navy he held senior positions at the shipbuilder Armstrong, Mitchell, & Co (later Vickers-Armstrong, now BAE Systems-VSEL). On the specific point see "English Expert for Small Calibre Guns; Sir William White Favors 12-Inch Armament with a Battery of 6-Inch Weapons" *New York Times* (18 November 1910), page 6.

⁴⁷² Captain Alfred Thayer Mahan, "Reflections, Historic and Other, Suggested by the Battle of the Japan Sea" Congressional Testimony, Committee on Naval Affairs 14 January 1907, 59th Congress, 2nd Session, Document 213, bound as *Size of Battle Ships* (no date, no publisher) pages 14-15.

⁴⁷³ Captain Alfred Thayer Mahan "Comments on the Armament of Battleships" 17-18 November 1910, reproduced in *Letters and Papers of Alfred Thayer Mahan, Volume III: 1902-1914*, edited by Robert Seager III and Doris D Maguire (US Naval Institute Press, 1975) page 679-681.

actions of destroyers, the turning point of the fight would seem to have centered in the heavy gun⁴⁷⁴.

Later, in analyzing the battle of the Yellow Sea, Pakenham returned to the themes of caliber and range. On 10 August 1904 “the fate of the day had lain with, and had been entirely decided by, heavy guns, if not be the heaviest only. The Japanese express regret that their new cruisers do not each carry a pair of 10-in. guns, and everything in this war has tended to emphasise the vast importance to a ship, in every stage of her career, of carrying some of the heaviest and furthest shooting guns that can be got into her”⁴⁷⁵. Finally, in his discussion of Tsushima he again attacked the notion of volume of fire. “The Russians had failed to realize that a certain loss of power must accompany a too profuse expenditure of ammunition, as their projectiles never ceased to fall, whatever the range, and however unmolested they were by the Japanese at the time”⁴⁷⁶. Yet Pakenham also acknowledged that when the Russian heavy guns were brought into action they very nearly made critical hits on the Japanese, just missing their targets. The more accurate 6 inch batteries hit the targets, but were ineffective⁴⁷⁷.

⁴⁷⁴ Pakenham report 19 June 1904, Great Britain Admiralty Intelligence Office *The Russo-Japanese War 1904-1905: Reports from Naval Attachés* (republished by Battery Press, no date), page 86-87.

⁴⁷⁵ Pakenham report 17 August 1904, Great Britain Admiralty Intelligence Office *The Russo-Japanese War 1904-1905: Reports from Naval Attachés* (republished by Battery Press, no date), page 167.

⁴⁷⁶ Pakenham report 16 entitled “The Battle of the Sea of Japan” no date, Great Britain Admiralty Intelligence Office *The Russo-Japanese War 1904-1905: Reports from Naval Attachés* (republished by Battery Press, no date), page 386

⁴⁷⁷ Pakenham report 16 entitled “The Battle of the Sea of Japan” no date, Great Britain Admiralty Intelligence Office *The Russo-Japanese War 1904-1905: Reports from Naval Attachés* (republished by Battery Press, no date), page 366-67

The big gun, by virtue of its turret mounting allowed for high elevation fire, and thus a plunging effect on the target⁴⁷⁸. Pakenham commented on the importance of plunging fire. “There has been at least one occasion in the present war where the low limit of elevation to be obtained from the heaviest guns has been much felt, namely the day the *Petropavlovsk* was destroyed”⁴⁷⁹. Plunging fire allowed for shells to come crashing through the lightly armored decks and turret tops, rather than explode against the heavily armored waterline belts. Casement mounted medium and light guns could hit superstructure, mast, funnel, and hull, but could not affect a plunging trajectory.

Lieutenant Commander Sims, in a written rebuttal to Mahan’s piece, attacks the volume of fire argument. At Tsushima the Japanese

fired 50 pounds of the smaller projectiles for every pound that hit, whereas they fired only 5 pounds of 12-inch metal for every pound that hit, which accords with the law that we have deduced from our target practices, namely that the smaller the gun the more projectiles you must waste to make a hit... Moreover, as a matter of fact, a fleet having but one caliber of heavy guns on each vessel would have been able to make still more hits in a given time because their fire-control officers would not have suffered from the ‘interference’ (delay) caused by the more numerous discharges of the smaller guns⁴⁸⁰.

Admiral Sir Reginald Custance analysed the three way trade off between speed, armor, and armament in his discussion of the Russo-Japanese War. He noted that Russian ships

⁴⁷⁸ In contrast, secondary armament was often mounted in broadside casements, inhibiting elevation.

⁴⁷⁹ Pakenham report 16 April 1904, Great Britain Admiralty Intelligence Office *The Russo-Japanese War 1904-1905: Reports from Naval Attachés* (republished by Battery Press, no date), page 65. *Petropavlovsk* was herself, however, destroyed by a mine.

⁴⁸⁰ Lieutenant Commander William S. Sims, “The Inherent Tactical Qualities of All-Big-Gun, One Caliber Battle Ships of High Speed, Large Displacement and Gun Power” Congressional Testimony, Committee on Naval Affairs 14 January 1907, 59th Congress, 2nd Session, Document 213 bound as *Size of Battle Ships* (no date, no publisher) page 27

generally were undergunned compared to the Japanese ships in the same weight class, and that the Russians suffered from being “beaten down” by the volume of fire generated by the Japanese⁴⁸¹. Custance argued that Russian ships included too much armor. The Russian cruisers at Ulsan were hit repeatedly, yet

their floating power was not seriously compromised although they were practically beaten ships... Again the *Rurik* was completely beaten and her fire silenced, but she still floated and was only sunk by opening the Kingston valves⁴⁸². These facts tend to show that in the designs of the Russian ships too much regard was paid to the supposed dangers to flotation and stability... Ships need not be made absolutely unsinkable, but only sufficiently so to win victory⁴⁸³.

Essentially the weight which went into keeping an impotent hull afloat could have been better utilized by adding guns, which perhaps would have prevented the Japanese from beating the ships in the first place.

Optimal Engagement Range

On the question of optimal range there was a strong divergence of opinion. Some argued that short range engagements were better, as at short ranges more fire could be concentrated as smaller batteries were able to engage. At longer ranges the likelihood of a hit was more a result of random chance than any controllable aspect of fire control accuracy. Furthermore long range engagements wasted ammunition to no discernable effect. Others argued, predominantly on deductive principles, that longer ranges were better, as the side with a range advantage could hit with impunity. Between these two views were those of Pakenham and the *Official History (Naval and Military)* which argued that range considerations were

⁴⁸¹ Custance, *The Ship of the Line in Battle (op cit)* pages 107-108

⁴⁸² Opening these valves scuttles the ship to prevent capture.

⁴⁸³ Custance, *The Ship of the Line in Battle (op cit)* pages 156- 157

secondary to the admiral's objective. There were advantages to each type of engagement, and the key was for one side to have the initiative of choosing whichever approach they wished.

In his analysis of the battle of the Yellow Sea, Admiral Sir Reginald Custance drew three conclusions. The first was that crossing the **T** was neither necessary nor sufficient for victory. He also noted "(2) the mistake of wasting time at 'long bowls'. (3) The risk from chance hits during a prolonged action at long range"⁴⁸⁴. These later two lessons stressed close action. Long range fire reduced accuracy, so that the probability of hitting was mere chance. This meant that ammunition consumption increased, battles risked being indecisive, and that either side had a chance of striking a lucky hit, irrespective of their advantage in fire control at shorter ranges. Custance returned to this theme in his analysis of Tsushima, arguing that the most important task of the gun was to hit the enemy. Hitting depends

firstly, on closing to ranges sufficiently short to make the fire decisive. On the 10th of August [the battle of the Yellow Sea], and at Ulsan, the ranges were too long, but at Tsu Shima Togo, profiting by experience, closed at once, and fought the battle at shorter ranges... Secondly, on counteracting the errors inseparable [*vis*] from firing at a moving object, either by firing a large number of rounds, which involves a more or less numerous battery, or by the use of accurate weapons and appliances⁴⁸⁵.

Corbett argued that long range engagements traded the ability to inflict harm on the target against safety for the attacker. In his analysis of Ulsan he notes

that Admiral Kamimura did not obtain a more decisive result was undoubtedly due partly to the long ranges he persistently maintained, and partly to his not having with equal resolution kept his position on the enemy's line of retreat. For this he alone was responsible, but in refusing to close he was only acting in accordance with the

⁴⁸⁴ Custance, *The Ship of the Line in Battle (op cit)* page 142

⁴⁸⁵ Custance, *The Ship of the Line in Battle (op cit)* page 186

policy which the Japanese had adopted all through as an exigency of the naval situation⁴⁸⁶.

Corbett approved of the overall Japanese policy of avoiding risk to the fleet prior to decisive concentration, even if that meant forgoing favorable, but not decisive, opportunities for action.

The British Official History argued that close range engagements were preferable, but not necessary. The effect of closer range at Tsushima

in more rapidly forcing a decision is indisputable. At first sight it might appear that closer range is in favour of the fleet whose training in gunnery is less perfect; but it must be remembered that whatever the range may be the better trained guns' crews will obtain the greater number of hits; and it was the frequency with which they were hit that had such marked effect upon the Russian ships... In a word, the intensity of fire from the Japanese ships overwhelmed their opponents and provided their own protection. And the victory was gained entirely by the gun⁴⁸⁷.

Factors of Morale at Sea

There remained divergence over the importance of morale as opposed to physical factors. Some commentators believed that ships and fleets could be beaten by breaking the will of the commander or crew to carry on the engagement efficiently. Others argued that ships had become so advanced, in terms of fire control, ammunition distribution, gun servicing, propulsion, and navigation, that the only way to beat a fleet was to physically destroy or sink ships.

⁴⁸⁶ Sir Julian Corbett, *Maritime Operations in the Russo-Japanese War 1904-1905*, Volume I, (originally a confidential publication of the Committee on Imperial Defence, 1914, republished by US Naval Institute Press, 1994) page 448.

⁴⁸⁷ Great Britain Committee of the Imperial Defence (Historical Section) *Official History (Naval and Military) of the Russo-Japanese War Volume 3: San-De-Pu, Mukden, The Sea of Japan* (His Majesty's Stationary Office 1920) page 805.

McCully, emphasizing moral factors, traced the Russian defeat back to the death of Makarov.

Far beyond the loss of the battleship to the Russians was the loss of their energetic and fearless admiral. Officers and men gave him the completest [*sic*] confidence, and under him still believed in the possibility of ultimate victory... His loss, too, came at a time when the injured ships [those hit during the sneak attack on Port Arthur] were approaching completion, and when the spirit of the fleet again began to run high with the anticipation of victory when they should meet the enemy with their entire fleet and under his leadership. This was a blow from which the morale of the Russian fleet never recovered⁴⁸⁸.

Mahan argued that at Tsushima the volume of fire generated by the Japanese was specifically detrimental to the sailors on the Russian ships. The “result being upon the personnel, goes far to establish the actual superiority of the secondary battery, in which the Russians had little more than half the number possessed by the enemy, while in the heavier calibers they had more than double”⁴⁸⁹. He held that in the Battle of the Yellow Sea, the subordinate commanders were defeated with Vitgeft’s death, and thus didn’t engage the Japanese.

If the Russian fleet, to a ship, had gone down in such an attempt, Manchuria might have been lost; but it would have been well lost with such a priceless gain in *morale* to the Russian navy, and, what was more immediately to the point, the Japanese fleet could not but have suffered to the extent of at least temporary disability⁴⁹⁰.

Pakenham provided a stirring account of how despite the volume of fire brought against the Russians, they were not beaten until their ships were sunk or entirely disarmed.

⁴⁸⁸ McCully, *The McCully Report (op cit)* pages 80-82.

⁴⁸⁹ Captain Alfred Thayer Mahan, “Reflections, Historic and Other, Suggested by the Battle of the Japan Sea” Congressional Testimony, Committee on Naval Affairs 14 January 1907, 59th Congress, 2nd Session, Document 213, bound as *Size of Battle Ships* (no date, no publisher) page 15.

⁴⁹⁰ Captain Alfred Thayer Mahan, *Naval Strategy: Compared and Contrasted with the Principles and Practice of Military Operations on Land, Lectures Delivered at the U S Naval War College, Newport, R I, between the years 1887 and 1911* (Little Brown & Company, 1911) page 407.

The ever-contumacious *Suvarov* had survived the attack of the Japanese destroyers. It is said that she had only two 12-prs. available to repel these small craft, and that one of their torpedoes took effect. Her plight must have been pitiable. Even so, shattered, mutilated, halting, and with her name already indelibly inscribed in the pages of history, it is possible that this intrepid spirit was aspiring to the greater immortality of a death-bed surrounded by the battleships of the enemy.⁴⁹¹

In somewhat less breathless prose Jackson reported how the *Suvarov*, *Kamchatka*, and *Oshabya* continued to fire on the Japanese until eventually sunk by heavy gunfire⁴⁹².

Summary: Naval Warfare

Naval Warfare presents a puzzle, and is not fully explained by a Bayesian approach. There was strong convergence demonstrated on the issues of the lethality of mines and on the impotence of the surface fired torpedo. However there was no convergence on the issues of capital ship armament and battle tactics, with different observers claiming that an advantage in speed and range was both decisive and easily negated, that the all big gun armament concept had been proved and rejected, and that navies would be better served by building more smaller ships and fewer bigger ships.

There were few disputes of fact, other than the trigonometric specifics of Mahan's navigation calculations in the *Proceedings* article. There was, however, a strong dispute about interpretation, as can be seen in the following chart displaying the various attributes displayed by the fleets at Tsushima.

⁴⁹¹ Pakenham report 16 entitled "The Battle of the Sea of Japan" no date, Great Britain Admiralty Intelligence Office *The Russo-Japanese War 1904-1905: Reports from Naval Attachés* (republished by Battery Press, no date), page 375.

⁴⁹² Jackson report 28 June 1905, Great Britain Admiralty Intelligence Office *The Russo-Japanese War 1904-1905: Reports from Naval Attachés* (republished by Battery Press, no date), page 395.

Chart 3 – 9 Comparison of Fleets Engaged at Tsushima⁴⁹³

		Tsushima Fleets	
		Japanese	Russian
Speed		Advantage	Disadvantage
Range		Advantage	Disadvantage
Broadside	Heavy Guns (10-12 inch)	17	41
	Medium Guns (6-8 inch)	110	59
	Light Guns (<6 inch)	0	11

While all parties agreed that the Japanese had displayed better tactical skill, some argued that the superior range, and especially speed, had allowed the Japanese to make up for a deficient heavy armament, by concentrating heavy fire more effectively and thus win. Furthermore, Sims and Pakenham in particular argued that the Japanese held back medium caliber fire, while the Russians fired rapidly, and thus the Russians complicated their own fire control. While the Japanese may have had more medium guns, the Russians fired more medium shots, to no effect. Pakenham noted that when the Russians were able to fire their heavy guns at long ranges they came close to inflicting critical hits upon the Japanese⁴⁹⁴.

Custance, Mahan, and McCully, however, argued that the Japanese superiority in medium caliber weapons served to smother the Russians, and the superior heavy armament from the

⁴⁹³ Calculated from Custance, *The Ship of the Line in Battle (op cit)*; Brassey, Thomas Allnutt (editor) *The Naval Annual, 1904* (J. Griffin & Co., 1904), *The Naval Annual, 1905* (J. Griffin & Co., 1905); Fred T. Jane, *Fighting Ships 1905-1906* (Sampson Low Marston, 1905; ARCO Reprint, 1970); and Sims, "The Inherent Tactical Qualities of All-Big-Gun, One Caliber Battle Ships of High Speed, Large Displacement and Gun Power" Congressional Testimony, Committee on Naval Affairs 14 January 1907, 59th Congress, 2nd Session, Document 213 bound as *Size of Battle Ships* (no date, no publisher)

⁴⁹⁴ Pakenham report 16 entitled "The Battle of the Sea of Japan" no date, Great Britain Admiralty Intelligence Office *The Russo-Japanese War 1904-1905: Reports from Naval Attachés* (republished by Battery Press, no date), page 365 and page 406.

Russians failed to generate a corresponding volume, despite the occasional hitting upon the *Asahi* and *Mikasa*. Early on, they noted, the Russian sailors were beaten by the effects of volume of fire, and ceased to crew their ships effectively, precipitating a vicious circle of further concentration of fire and demoralization.

Summary: Naval Tactics

The debate about naval tactics following the Russo-Japanese War suggests that Bayesian adjustment did not occur. There was convergence in two issues, that mines were a serious threat to capital ships and that torpedo boats were not. However on the issue of capital ship design there remained unresolved issues, including disagreements about the tactical utility of speed and range, the nature of a ships armament, and the size of the battleship.

Analysis: The Limited Utility of the Bayesian Approach

The Bayesian approach had only a mixed degree of success overall in explaining the naval and military observations about the Russo-Japanese War. While there was convergence around some factors, there remained a substantial degree of divergence regarding other factors. The critical departures from Bayesian predictions were both departures of fact and departures of interpretation. Both are problematic for the Bayesian approach, but divergence in matters of fact indicate a more critical failing at the Lakatosian “hard core” of the research program.

Before discussing these flaws in detail, it is important to note that Bayes does generate some accurate predictions. Of those observers and commentators who discussed the issues, hasty fortifications were viewed by all to be effective retardants of offensive action, ammunition consumption was surprisingly high, indirect fire was the preferred (indeed, only) way of using artillery, and on the naval aspects commerce raiding was seen as wasteful, mines were seen as effective against capital ships, and torpedo boats were ineffective vessels. In addition to these factors, there were other areas where there was a preponderance, though not unanimity, of opinion. Most observers felt that suppressive fire, when combined with infantry, was important, most felt that a bold spirit was an important part of a military leader's attributes, and most felt that the so called "risk theory" of naval strategy was in error. However, there remained big gaps in convergence that suggest weakness in the Bayesian approach.

Faults at the Core: Departures of Fact

There were three points of fact where the military observers did not agree. These were:

- Whether the terrain in Manchuria was adequate for cavalry operations
- Whether the Japanese adhered to German close order infantry assault tactics
- Whether shrapnel fire was effective against the enemy

As already established, some observers argued that the terrain in Manchuria was hilly, broken, wooded, choked with impassible vegetation (the Kau-liang), and thus poor ground over which to practice shock action or even mounted rifle fire. Other observers disagreed, noting that the hills faded out east of Liao-yang and opened into a wide, sparsely settled,

plain. The treacherous Kau-liang was cut down and cleared by the autumn, and thus should not have been a factor for at least the Sha-ho, Mukden, and Mishchenko's raid, plus any other potential opportunities that didn't result in battles.

Some observers argued that throughout the war the Japanese adhered to German assault tactics, which at that time stressed close order formations until the final bayonet tipped assault. Other observers disagreed, stating that as the war progress Japanese assault formations opened up, so that by Mukden they more closely resembled Boer war tactics of small groups progressing in bounded over-watch to a gradually thickening skirmish line.

Shrapnel fire was a more complex issue, but one where the debate was a more lopsided, with most observers concluding that it was effective, but a minority questioning its utility. Some observers and commentators argued that shrapnel was largely ineffective, as casualty returns indicated that rifle fire was more effective at wounding people. Other commentators challenged this on two grounds. First, they argued, collecting data at field hospitals biased the results to exclude wounds that resulted in immediate death. Only those soldiers that showed some signs of life were brought back to field hospitals. Those killed outright on the field were often buried. Since, they argued, shrapnel has a higher immediate lethality than rifle fire, wounds caused by shrapnel were systemically underrepresented. Second, they argued that much of shrapnel's effects were suppressive and restrictive, that is, shrapnel forced the targets under cover, where they were immune to lethal effects, but unable to effectively crew weapons. In the evocative vocabulary of one British observer, shrapnel

“smothered” the targets⁴⁹⁵. Additionally, shrapnel restricted movement, by keeping entire avenues of advance or retreat blocked by a potentially lethal curtain of fire. By selectively managing these curtains of fire, the artillery were able to channel, or deny outright, the enemy’s movement.

The debate on shrapnel, therefore, straddles the difference between divergence of fact and divergence of interpretation. Those who saw value in shrapnel saw its effects as largely suppressive and restrictive, and thus not reflected simply in the count of those killed or wounded by shrapnel. Those who saw limited value looked for instances of physical destruction and at body counts.

Differences of Interpretation

As the shrapnel issue makes clear, there were instances where observers and commentators may have agreed on a particular set of facts, but disagreed strongly about the interpretations of those facts. This largely revolved around the central issue of defining victory, but that issue was manifest in the discussion of two particular battles. There were also disagreements about naval strategy and, especially, naval tactics and capital ship design.

- What are the appropriate metrics for victory in land combat?
 - Did the Japanese win, and if so how decisively, at Liao-yang?
 - Did the Japanese win, and if so how decisively, at Nan-shan?
- Could the slow Japanese rate of advance have been improved upon?

⁴⁹⁵ Hume, “Field Artillery”, 27 October 1904, Great Britain General Staff: War Office *The Russo-Japanese War: Reports from British Officers Attached to the Japanese and Russian Forces in the Field* **Marked Confidential** (volume one, no publisher, 1905) page 373.

- Was surprise a critical factor in the ultimate success of the Japanese effort?
- Was military discipline or offensive spirit the more important characteristic of soldiers and sailors?
- Were Russian ships beaten due to the more effects of high volumes of fire or were they destroyed by large caliber projectiles?

In their discussions of winners and losers the observers and commentators disagreed, or more specifically, diverged, about the appropriate metrics. There were few instances of observers competitively discussing the relative merits of different metrics. Instead, observers using different sets of metrics drew different conclusions from the same event. Thus the “narrative of field operations” aspect of the histories agreed, even while the interpretations of those narratives ran in opposite directions.

Within the literature of the period there were two metrics, with some variants, that were used to determine victory. Some authors looked upon the occupation of territory as the critical metrics. If the Russians held their position, they won. If they quit the field, they lost. Others examined losses, which could be tabulated in various ways, either controlling for or ignoring the relative sizes of the forces engaged.

Rowan-Robertson, for example, looked at casualties as a percentage of friendly forces engaged (Blue casualties / Blue engaged) and possession of the battlefield. Burne, however, looked at loss exchange ratios (Blue casualties / Red casualties). Sedgwick looked at loss

infliction rates (Blue casualties / Red engaged : Red casualties / Blue engaged)⁴⁹⁶. The US War Department Official History looked at the strategic value of the territory gained, irrespective of cost. In the Russo-Japanese War these indicators pointed in different directions.

The two clearest cases of these divergences were the battles of Nan-shan and Liao-yang. At Nan-shan a vastly outnumbered Russian force held a peninsula for a day against a determined Japanese attack, and inflicted three times as many casualties on the Japanese before being forced to retreat, due to lack of ammunition, from a strategically important position. At Liao-Yang a slightly larger Russian force inflicted severe casualties on a Japanese attacker, before retreating in order (while not under fire) from a position of dubious strategic importance.

In naval tactics, the critical issue was whether ships were beaten morally or physically. If physically, ships needed large caliber guns capable of firing projectiles heavy enough to puncture armor and destroy ships, and in turrets capable of the elevation necessary to generate plunging fire. Such an armament was ideally complemented by high speeds to ensure long ranges, making smaller guns superfluous. If ships were defeated morally they needed to generate large volumes of fire to act directly on the soft areas of ships, such as the funnels, superstructure, and masts, and this was best done with a mixed battery. The mixed battery was best applied at close ranges, where the medium guns would be effective.

⁴⁹⁶ Sedgwick *The Russo-Japanese War on Land: A Brief Account of the Strategy and Major Tactics of the War (op cit)* page 23.

Conclusion: The Bayesian Approach and the Lessons of the Russo-Japanese War

Even the commentators seemingly acknowledged the contradictory nature of the evidence on many important points. Major General Sir George Aston noted in 1920 that

the struggle was fought out such a short time ago, and the mass of printed matter on the subject is so overwhelming, and so contradictory, that it is difficult for any one to focus properly the important principles which were exemplified, and to extract the true facts from the many contradictory reports⁴⁹⁷.

Yet in contradistinction to Aston, General de Négrier argues in 1906, a few months after the conclusion of hostilities, that “one striking feature in the various reports is their remarkable agreement both as to the lessons taught, and as to the relative praise or blame to be assigned to the different operations”⁴⁹⁸.

Given the lack of convergence on critical issues, it is necessary to explore the efficacy of the interest based, general cognitive, and ideational approaches to learning to see how well they account for the data, and whether they can resolve some of the problems with the Bayesian approach.

⁴⁹⁷ Major-General Sir George Aston, *Letters on Amphibious Wars* (John Murray 1920) page 210

⁴⁹⁸ General Francois Oscar de Négrier, *Lessons of the Russo-Japanese War*, translated with permission by E. Louis Spiers (Hugh Rees, 1906) page 7.

Chapter 4: The Bureaucratic Interest Research Program

“On the actual day of battle naked truths may be picked up for the asking; by the following morning they have already begun to get into their uniforms”⁴⁹⁹

In this chapter I will assess the explanatory power of the bureaucratic interest-based research program in explaining the lessons drawn by European and American military professionals from the experience of the Russo-Japanese War. The bureaucratic politics based approach focuses on the organizational motivations for the behavior of individuals with respect to their decisions regarding autonomy, resource allocation, and hierarchy. As noted in the earlier literature review, bureaucratic politics has been a vibrant research program for political science generally, and international security studies specifically.

Bureaucratic politics is unique in that it is also a explanation used by military experts to account for distorted learning and policy decisions. General Hamilton’s quotation, provided in the chapter heading, is an eloquent statement of this phenomenon. In a completely different context, Rhodes noted Admiral Elmo Zumwalt’s reliance on bureaucratic politics to explain United States Naval budget allocations between the services, though Rhodes found no empirical support for Zumwalt’s lament⁵⁰⁰.

In the earlier chapters I established three hypotheses that would indicate the operation of a bureaucratic theory of causality. These were a deliberate tradeoff between resource maximization and autonomy maximization, the appearance of “garbage can” problem

⁴⁹⁹ Lieutenant-General Sir Ian Hamilton, *A Staff Officer’s Scrap Book During the Russo- Japanese War* (volume one) (Edward Arnold, 1905), page i.

⁵⁰⁰ Rhodes, “Do Bureaucratic Politics Matter?” (op cit, 1994) pages 3-4

solving discussions, and a further specification on the role of motivated bias versus rationalist formulations of bureaucratic politics. That specification was that a rationalist model would predict careful tradeoffs between resources and autonomy, because the rational bureaucratic actor would consider the feasibility of their objectives, and recognize that, except in exceptional circumstances, it would not be practical to completely dominate both resources and autonomy⁵⁰¹. A motivated bias approach, in contrast, would predict no tradeoffs as the bias would not be bounded by feasibility constraints.

The Russo-Japanese War presents many levels on which to explore these hypotheses. At the most basic level, we have the bureaucratic competition between the military organizations and the civilian organizations. The broad civil-military divide within the great powers prior to and following the First World War has already been carefully studied, and I will draw on this literature to determine to what extent observed behavior about the lessons of the Russo-Japanese War conforms to predicted behavior, given the idiosyncrasies of bureaucratic interests in the observer countries. In addition to expecting conformity with the existing literature on civil-military relations, we should generally expect to see military observers stressing surprise and offensive doctrines as strategically decisive, as these premises are often effective claims for autonomy and resources on civil leadership⁵⁰².

⁵⁰¹ Sapolsky, *The Polaris System Development* (op cit).

⁵⁰² Posen, *Sources of Military Doctrine* (1984 op cit). Posen also notes that this preference can be checked by civilian leaders, and that their propensity to check organizational interests is correlated with the level of threat in the international system.

Below the civil-military distinction is an active literature looking at interservice competition, i.e., the degree to which the various armed services, notably the Army and the Navy at the turn of the century, compete with one another for resources and primacy⁵⁰³.

Specifically for the Russo-Japanese War, we would expect this competition to play out in the discussion of the relative importance of the naval and land components of the war. The war included two large naval battles, the Battle of the Yellow Sea and the Battle of Tsushima, and included large ground engagements, such as Mukden, Laio-yang, Port Arthur, and Wa-Fang-Gou. Thus, there was certainly ground to explore the interconnectedness and importance of these two very different areas of combat. More narrowly, we also expect differences in the discussion of the question of naval gunfire in support of ground objectives, including the reduction of fortifications and suppression of enemy fire and maneuver units. The siege of Port Arthur, the battles around the Yalu, and the landing and Chemulpo (Inchon) all involved both a naval and ground component, and provide an opportunity to explore the narratives and causal inferences of observers.

Finally, some advocates of a bureaucratic approach look at intra-service competition, i.e. the degree to which different elements within a service compete for resources and autonomy. In the case of early twentieth century armies, this was manifest in the interrelation between the

⁵⁰³ By the 1930s, the nascent aerial forces of the great powers began to organize and compete for resources. This third branch would emerge out of the Army's need for tactical aviation, the Navy's need for airborne strike and reconnaissance, and eventually the national needs for strategic strike and transportation. However during the Russo-Japanese War airplanes were experimental toys, and lighter than air craft were confined to rare observation roles. Thus the emergence of air power and its associated affects on the military services is not something that these data are particularly useful for exploring. See Michael Sherry, *The Rise of American Air Power* (op cit, 1987), Allan Millett and Williamson Murray, *Military Innovation in the Interwar Period* (op cit, 1996); and David E. Johnson *Fast Tanks and Heavy Bombers* (op cit ,1998).

arms of Cavalry, Artillery, and Infantry. The navies of that period were more homogenous, without the naval aviation, undersea, and nuclear branches which exist in more modern navies⁵⁰⁴.

To explore this level we will look at the land forces specifically. While there may be some intra-service divisions within some navies of this period, these are not well documented, nor do they provide as much color on the issues as those within the armies⁵⁰⁵. With the army, however, we would expect to see the different army vying for primacy in their explanation of outcomes within the Russo-Japanese War. An arm that emerged paramount would have claim on a greater share of resources, attention, and prestige, as well as stronger support for autonomous organization. Conversely, subordinate arms lose these resource competitions, as well as find some of their autonomy bounded by the needs and abilities of the primary arm. So our first prediction at this level is that there should be a clustering of arms suggesting that their own arm is dominant on the battlefield, irrespective of national origin.

In addition to this clustering behavior, we would expect bureaucratic politics to manifest themselves in a number of tactical debates. The artillery, as a branch of service, should favor destructive fires, as those make the artillery the most prominent branch. Conversely,

⁵⁰⁴ Rhodes, "Sea Change" (op cit, 1996), discusses these branches within the context of the US Navy. In the US Navy in particular nuclear officers are regarded as a breed apart, given the legacy of Admiral Hyman Rickover. All US submarines are nuclear, and nuclear power is used only for submarines and aircraft carriers. In order navies submarines include diesel electric Air Independent Propulsion (AIP), and even within the US Navy there is some discussion of resurrecting a broader family of surface combatants, beginning with the next generation cruiser, the CG(N?)-X.

⁵⁰⁵ The Royal Navy maintained an active Marine force, as did the US Navy. Such divisions were not as common in the continental navies. Furthermore, there are few documents produced by or for Marines, presenting us with imperfect data to explore the question. There are plenty of data at related to armies, and thus we the added work in analyzing intra-navy politics adds very little leverage.

infantry and cavalry should favor suppressive fires, as these keep artillery subordinate to the maneuver and close fighting units, and allow those units to actually “win” the battles. Hasty fortifications and entrenchments should be denigrated by the maneuver units, as these would require greater involvement and coordination with artillery to overcome⁵⁰⁶. Likewise, artillery observers should note that hasty improvements have the ability to disrupt the maneuver elements, but that they are still susceptible to reduction by artillery fire. In actuality it will be shown that it is not necessary to enter the intricacies of these predictions at the level of tactics because the bureaucratic model performs so poorly in clearing easier thresholds.

Guns Versus Butter, Civil / Military Relations

At the highest level of interest-based explanations we would predict that military writers would discuss the trade off between civilian expenditures and military expenditures, colloquially known as “guns versus butter”, and come out strong in favor of the former⁵⁰⁷. Similarly they would identify the relationship between civil and military authorities in military decisionmaking, and attempt to privilege the later at the expense of the former. We can only partially examine these propositions, as we have only collected data from military sources,

⁵⁰⁶ As we have already demonstrated in Chapter Three discussing Bayesian updating, this was not the case. Those commentators who remarked on hasty fortifications did so in a unanimously positive respect, i.e., they argued that hasty fortifications could delay and complicate offensive operations, and required deliberate combined arms assaults. Thus the bureaucratic interest-based approach begins with some weaknesses.

⁵⁰⁷ This does not preclude former military officers from taking a different position when they leave the military. Indeed, one of the hallmarks of the bureaucratic politics approach is that the beliefs of the individual are a result of their position.

and thus cannot construct a valid test of falsification by including data drawn from civilian sources, which would be predicted to exhibit opposite behaviors⁵⁰⁸. The results of our partial test, however, do offer some support to interest-based explanations, as these two behaviors are seen in the military writings. The results of this examination are summarized in the chart below.

Chart 4 – 1 Summary of Civil Military Results

Country	Service	Author	Title	Official	Year	Civil / Mil	Guns / Butter
France	Infantry	Cordonnier	Japanese	No	1912		Yes
France	Staff	de Negrier	Lessons	No	1906	Yes	Yes
GB	Marine	Aston	Amphib	No	1920		Yes
GB	Infantry	Bird	Lectures	No	1909	Yes	Yes
GB	Artillery	Burne	Liao Yang	No	1936	Yes	Yes
GB	Navy	Corbett	Maritime C	Yes	1914		Yes
GB	Navy	Custance	Ship of the	No	1912	Yes	Yes
GB		Footslogge	Short Acco	No	1925	Yes	
GB	Infantry	Hamilton	Reports	Yes	1906	Yes	Yes
GB	Infantry	Home	Reports	Yes	1906	Yes	Yes
GB	Navy	Pakenham	Reports	Yes	1904-05		Yes
GB	Artillery	Rowan-Rol	Liao Yang	No	1914	Yes	Yes
GB	Artillery	Sedgwick	Campaign	No	1912		Yes
GB	Infantry	Kearsey	Study of S	No	1935	Yes	Yes
GB	Staff	Staff	Official His	Yes	1907-10	Yes	Yes
GB	Staff	Staff	Official His	Yes	1910-20	Yes	Yes
Germany	Staff	Caemmere	Mukden	Yes	1906		Yes
Germany	Staff	Staff	Liao Yan	Yes	1913	Yes	
Germany	Staff	Staff	Ya-Lu	Yes	1913	Yes	Yes
Germany	Staff	Staff	The Scha-	Yes	1913	Yes	
USA	Artillery	Arnold	Why the R	No	1930	Yes	
USA	Engineer	Judson	Reports	Yes	1907	Yes	Yes
USA	Engineer	Kuhn	Reports	Yes	1906	Yes	Yes
USA	Cavalry	McClerman	Reports	Yes	1907		Yes
USA	Navy	McCully	McCully	Yes	1906		Yes
USA	Infantry	Reichmanr	Reports	Yes	1906	Yes	Yes
USA	Staff	Staff	Epitome	Yes	1907	Yes	
USA	Artillery	Wood	Yalu to Po	No	1905	Yes	

⁵⁰⁸ This is what Van Evera refers to as a “hoop test”, i.e., one where failure is a problem but success isn’t particularly helpful. Stephen W. Van Evera, *Guide to Methodology for Students of Political Science* (Cornell University Press, 1997)

Guns Versus Butter

Many of the commentators criticized the Russians for their poor military preparedness and diversion of funds to civil improvement projects in Manchuria, especially the commercial port of Dalny, which was built before Port Arthur was fortified. Many also praised Japan's tremendous military expenditures prior to the Russo-Japanese War, despite noting the costs of these funds in forgone civil investment or lower taxation. Indeed, there was no dissention from this view.

The German study criticizes Russia for diverting funds from essential military projects, noting the incomplete fortifications at Port Arthur, the single tracked railroad south of Mukden, the very slow proliferation of (and total absence of training with) the advanced quick firing artillery, the lack of high-explosive shells, and so forth. Not only did such misdirected spending harm the war effort, but, almost as importantly, it signaled to Japan that Russia would eventually complete preparations, and thus gave Japan a long, but finite, window in which to attack before Russia could complete its defensive arming⁵⁰⁹. In short, a slow adoption of superior technology by the Russians enticed Japan to attack. The history

⁵⁰⁹ The existence of a "window of opportunity" for Japan, a time in which Russia was weak in the Far East but with a definite expenditure trend that would take Russia irrevocably ahead of Japan, is a theme that multiple commentators touch on. For example, Captain William Judson, US Army Corps of Engineers, wrote in the preamble to his report. "Japan struck when she did because of the Russian naval situation. Five or six battle ships were approaching completion in the Baltic. Russia was pursuing the policy of strengthening her eastern fleet as fast as ships came from the stocks. At the beginning of 1904 it was apparent to Japan that the time was slipping by when she could make war with the balance of advantages on her side. That she was ready to take the initiative, and that she did take it at this propitious moment, is evidence of the greatest military wisdom". William V. Judson report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 3) (US Government Printing Office, 1907) pages 147-148.

concludes that “the first period of the Russo-Japanese war is characterized by the unfinished state of Russia’s armaments, as compared with the readiness of Japan, which for years had prepared for the unavoidable struggle, and seized the opportunity of bringing it to a head when the balance of power by sea as well as on land was still in its favor”⁵¹⁰

Captain Judson, of the US Army Corps of Engineers, criticized the civil expenditures of Russia in Manchuria before the war. He noted that

the military efficiency of the great Siberian railroad was sacrificed to the building of the magnificent commercial cities of Harbin and Dalny, and innumerable well-built towns in Siberia and Manchuria. Insufficient funds were provided for the fortifications at Port Arthur, and a great undefended port, with every facility for the handling and storage of supplies and the unloading of troops, was created at Dalny to serve any enemy as the ideal base of operations⁵¹¹

Based on his observations of the war, Lieutenant-Colonel McLernand concluded with the strong appeal for national preparedness, specifically criticizing the current system in the United States.

Preparedness for war is a national duty, dictated by humanity, economy, patriotism, and national pride. In the present age such preparedness absolutely demands that a system be devised and accepted that will enable the country to pass from a peace to a war footing with the least possible expenditure of time and with the least practicable amount of friction and confusion. Perhaps there is no duty more important for military men in America than to try and impress upon their countrymen the fact that countries like Japan, which are prepared to pass in a day from a peace to a war footing, begin, on the declaration of war, to use their army, while we, at a like period, begin to organize ours⁵¹²

⁵¹⁰ German General Staff (Historical Section), *The Yalu* Lieutenant Karl von Donat (editor and authorized translator) (Hugh Rees, 1913) page 249

⁵¹¹ William V. Judson report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 3) (US Government Printing Office, 1907) page 149.

⁵¹² Edward J. McClernand report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 3) (US Government Printing Office, 1907) page 143.

Major Kuhn commented on the effectiveness of the machine gun for the defensive, and despite its expense, wanted it to be procured in high numbers for low level tactical formations throughout the army. "Machine guns played an important part in the siege, being freely used by both sides. The Japanese gun was a single-barreled gun of home manufacture, while the Russians used mainly the Maxim automatic. The Russian guns were used with telling effect against the Japanese in the numerous bloody assaults, being trained to cover all the approaches with a murderous fire"⁵¹³. He concluded his report by noting that "it seems certain that this weapon will play an important part in the future, and the equipment and tactics of machine guns should receive serious and prompt consideration for our army"⁵¹⁴.

For the British, Lieutenant Colonel Alexander Kearsy emphasized the importance of preparedness, not simply in the Russo-Japanese War, but as a lesson for all militaries. "It must be noted that the nation with a calculated military policy, including the training with the latest armament and equipment, will gain an incalculable initial advantage over a nation less ready for war. Such an advantage today might mean extermination for the unready"⁵¹⁵. While Kearsy did not believe that first strikes were themselves war winning techniques, a

⁵¹³ Joseph Kuhn report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 2) (US Government Printing Office, 1906) pages 196-197.

⁵¹⁴ Joseph Kuhn report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 2) (US Government Printing Office, 1906) page 230.

⁵¹⁵ Alexander H. C. Kearsy, *A Study of the Strategy and Tactics of the Russo-Japanese War Illustrating the Principles of War and the Field Service Regulations* (Gale & Polden 1904) page 12.

state couldn't expect to begin preparations when war was imminent. The long lead times to procure modern battleships, artillery, and munitions, as well as to train soldiers for combined arms operations, necessitated ongoing naval and military expenditures.

Civil / Military Relations

Multiple observers commented on the poor civil relations in Russia, in contrast with those in Japan. Alexieff, as Viceroy, was seen as a destructive influence in the campaign, forcing Kuropatkin to try and hold the Yalu, forcing him on a premature offensive at Wa-fang-gou, and otherwise blocking Kuropatkin's attempts at effective generalship. Even after Alexieff was recalled, the continued pressure of the Tsar and his ministers for action resulted in Sha-ho and San-de-pu, neither one of which Kuropatkin had wanted to fight, and neither one of which he was committed to winning. As for the Japanese, there was substantial praise. The Emperor had very little influence in setting the objectives or the pace of Marshall Oyama⁵¹⁶.

Major Rowan-Robinson criticized the cumbersome arrangement between Kuropatkin, the General, and Viceroy Admiral Alexieff, who held both a civil and military role. Kuropatkin's plan was to concentrate at Liao Yang, and thence at Mukden, without resisting on the Yalu or trying to maintain landlines to Port Arthur. However throughout he "was overruled by Alexiev –the politician –who preferred to risk almost certain defeat rather than abandon territory"⁵¹⁷

⁵¹⁶ Ian Hamilton was at a number of Japanese headquarters units, and even in his personal journal, much less his formal dispatches, he makes little mention of the Imperial Court. Lieutenant-General Sir Ian Hamilton, *A Staff Officer's Scrap Book During the Russo-Japanese War* (two volumes) (Edward Arnold, 1905)

⁵¹⁷ Major H. Rowan-Robinson, *The Campaign of Liao-Yang* (Constable & Co., 1914) page 53.

Furthermore, there was certainly criticism of the command structure in Port Arthur and the resulting friction between General Stoessel and Admiral Vitgeft. However, this criticism went beyond just this pair of officers to suggest that Stoessel's relationship with all of the other flag officers was harmful to the Russian defense⁵¹⁸.

Like others Aston criticizes the lag between aspirations which could lead to conflict, and domestic preparations for war, noting that such a lag only increases security risks.

In the event Japan seized the initiative both by sea and by land... It would be difficult to find a more striking example of the disasters which attend the fleets and armies of a country, in which an aggressive foreign policy has been allowed to proceed unchecked, although far ahead of the strategical preparations for its continuity after the failure of diplomatic measures⁵¹⁹.

Similar to the Aston study, Brevet-Major Bird argues that "it was, however, probably Russia's threat to increase her Far Eastern squadron, which caused Japan to precipitate matters, and make war in winter."⁵²⁰

In this refinement on the "window of opportunity" approach, the policy of Russian civilians, which was aggressive, was not backed by an appropriate resourcing of the military to add teeth to the policy. Either the diplomatic policy should have been more conciliatory, or the

⁵¹⁸ Stoessel's relationship with General Roman Kondratenko was notoriously poor. Kondratenko continually pushed for a vigorous and tenacious defense, but was constantly battling the defeatist Stoessel. In the eyes of many observers Kondratenko's death from Japanese shellfire was as much responsible for the fall of Port Arthur as the seizure of 203 Meter Hill. See Richard Connaughton, *The War of the Rising Sun and the Tumbling Bear* (Routledge 1991).

⁵¹⁹ Major-General Sir George Aston, *Letters on Amphibious Wars* (John Murray 1920) page 239. In this formulation it is the civilian influence which is destabilizing, while the military preparations lagged.

⁵²⁰ Brevet-Major W. D. Bird, *Lectures on the Strategy of the Russo-Japanese War* (Hugh Rees, 1911), page 14.

armament policy should have been accelerated. Instead, the mismatch generated the worst outcome for Russia. Japan armed and ultimately attacked, based on declared Russian policy, while Russia was not prepared to meet the Japanese attack, and thus she lost Port Arthur, Dalny, coastal waters, influence over Manchuria and Korea, and prestige in the eyes of the world.

Summary: Civilian and Military Interests

The findings on guns versus butter and civil military relations are not inconsistent with a bureaucratic interest-based approach, but nor are they inconsistent with Bayesian or other rival approaches. The data we have chosen, being solely from military sources, do not provide enough leverage to conclude with anything stronger than “not inconsistent with the approach”. This is an easy test, and the bureaucratic approach passes it, but to actually explore the power of the approach we need to go deeper, and explore cases where independent variable (interests) varied, to see if our dependent variable varies as well.

Differences Between Branch of Service

The rivalry between military and naval forces is well known, and is believed to permeate competitive behavior by the services in things as diverse as football to budgeting to the conduct of war. The Russo-Japanese War included major engagements at land and sea, and an *a priori* case could be made that either arena of warfare was the decisive arena. The military, because the Japanese couldn't win without achieving at least some success against the Russians and seizing territory such as Korea and Port Arthur, and the Navy because a naval defeat would leave Japan unable to project power across the Yellow Sea.

The turn of the century was a time of increasing military expenditure, and there were competing expensive programs. In the US, Great Britain, and Germany there were debates about building large fleets. In the US and Germany this would transform the countries into world powers, and in Great Britain this would entirely recapitalize the fleet to the *Dreadnought* standard⁵²¹. At the same time, new artillery and infantry equipment, proliferated among ever larger armies, generated military demand⁵²². Germany and the US were both undergoing tremendous economic expansion, but Great Britain was dealing with an expanding welfare state and relative economic decline⁵²³.

Given this environment, budgetary issues should have weighed heavily on policymakers in all countries, but especially the British. The contentious budgetary environment and procurement tradeoffs should have generated fierce competition between the advocates of the different services for resources. In such a competitive environment theories of interest-based bureaucratic behavior would *strongly* predict that the bureaucracies would mobilize to

⁵²¹ A full discussion of the Dreadnought revolution is beyond the scope of this work. See Norman Friedman, *Battleship Design and Development 1905-1945* (Smithmark Publishing, 1979), and Oscar Parkes, *British Battleships: "Warrior" 1860 to "Vanguard" 1950 – A History of Design, Construction, and Armament* (Seeley Service & Co, Revised edition, 1966) for a technical and historical overview of this period.

⁵²² David G. Herrmann, *The Arming of Europe and the Making of the First World War* (Princeton University Press 1996)

⁵²³ For the specific economic pressures constraining Great Britain in military, naval, and economic arenas see Aaron L. Friedberg, *The Weary Titan: Britain and the Experience of Relative Decline, 1895-1905* (Princeton University Press, 1988). On the economic limitations of the United States for building a global navy see Peter Trubowitz, Emily O Goldman and Edward Rhodes (editors) *The Politics of Strategic Adjustment: Ideas, Institutions, and Interests* (Columbia University Press, 1999), especially the chapters by Rhodes and Shulman. On economic pressures within Wilhelmitic Germany, see Jack Snyder *Myths of Empire: Domestic Politics and International Ambition* (Cornell University Press, 1993). For a more general discussion of the global economic situation see Paul M Kennedy, *The Rise and Fall of the Great Powers* (Random House, 1987).

protect their share of the budget against encroachment from other priorities, and would agitate for a still greater share. As part of this campaign we would expect the services to generate data supporting their arguments for a larger budget. A major and well publicized war would give these partisans ample opportunity to generate data to support such a case. Specifically, we would expect to see military observers and commentators stressing the decisiveness of their own service, *vis-à-vis* the rival service, for explaining the outcome of the Russo-Japanese War. The actual results of this analysis are shown in the chart below.

Chart 4 – 2 Summary of Interservice Results

Country	Source	Author	Title	Official	Year	Army / Navy	In line?
GB	Marine	Aston	Amphib	No	1920	Balanced	Maybe
GB	Infantry	Bird	Lectures	No	1909	Navy	No
GB	Artillery	Burne	Liao Yang	No	1936	Balanced	
GB	Navy	Corbett	Maritime O	Yes	1914	Balanced	
GB	Navy	Custance	Ship of the	No	1912	Navy	Yes
GB	Infantry	Hamilton	Reports	Yes	1906	Balanced	
GB	Infantry	Home	Reports	Yes	1906	Balanced	
GB	Navy	Pakenham	Reports	Yes	1904-05	Balanced	
GB	Artillery	Rowan-Rol	Liao Yang	No	1914	Balanced	
GB	Artillery	Sedgwick	Campaign	No	1912	Balanced	
GB	Joint Staff	Staff	Official His	Yes	1909-10	Balanced	Maybe
GB	Joint Staff	Staff	Official His	Yes	1910-20	Balanced	Maybe
GB	Infantry	Staff	Kearsey	No	1935	Navy	No
Germany	Army Staff	Staff	Mukden	Yes	1906	Army	Yes
Germany	Army Staff	Staff	Liao Yan	Yes	1913	Army	Yes
Germany	Army Staff	Staff	Ya-Lu	Yes	1913	Balanced	
USA	Engineer	Judson	Reports	Yes	1907	Navy	No
USA	Navy	Mahan	Size of Bat	No	1907	Navy	Yes
USA	Navy	Mahan	Naval Strat	No	1911	Navy	Yes
USA	Artillery	Wood	Yalu to Por	No	1905	Balanced	

	Predicted / Actual		
	Own	Rival	Balanced
All Countries	5	3	12
GB Only	1	2	10

Army/Navy: Which branch was felt to exercise the decisive influence on the war?
Was this in line with the predictions of interest based bureaucratic politics?

Note: Royal Marine (Aston) and Joint Documents favoring balance could arguably be considered accurate predictions

As is clear, the hypothesis that people would tend to favor their own service fails to generate useful predictions. If we specify further, and look simply at Great Britain, where it was argued financial pressures were more acute, we again fail to find support. Generally, those observers and commentators who examined the interrelationship between the services emphasized their codependency with the other for success. This in itself is surprising, as it suggests that observers passed up a chance to shape the debate over funding priorities. Even those few observers who expressed a preference for one service over the other didn't conform to the prediction, as some emphasized the importance of the other service above their own⁵²⁴.

Finally, we have three observations, including a Royal Marine and two joint documents, where the balanced discussion could possibly be considered as not falsifying the theory. In the case of the Royal Marine (General Aston) we could expect a balanced discussion because of the nature of amphibious operations, and in the case of the joint documents we might expect that the participation of both services would result in either a bland "common denominator" or an internally contradictory document. Yet even excluding these three observations, we are still left with a puzzle. Some servicemen did indeed argue that their own service was the decisive instrument in the war, but these were a small minority. Others argued that the other service was decisive, and many more argued that there was a balance where each service depended on the other for success.

⁵²⁴ Sir Julian Corbett, despite being a civilian, is considered to be a naval observation because his history was an official naval document, requested and paid for by the Admiralty, and because he, as a civilian, served as the official historian to the Royal Navy.

Negating Their Own Service

Those commentators and observers that negated their own service were all military officers who argued that the Russo-Japanese War was decided at sea. It is worth examining their views in some detail to understand how they arrived at this conclusion.

Despite have a narrative largely focused on military issues, Major Bird early in his book argued that “naval supremacy, that is, the destruction of the hostile fleet, was, for *both* sides, the decisive factor, and each should have strained every nerve to attain this end, relegating other necessary operations to *strictly subordinate* positions [emphasis added]”⁵²⁵. He found efforts to divert the fleet to direct military missions, including bombardment and raiding, to be wasteful. He also criticized resources devoted to the military campaign before the conclusion of the naval campaign to be foolish. He faulted both sides for having too few ships in the decisive area of operations- the Japanese for having a fleet too small to destroy Stark and Vitgeft early in the war, and the Russians for splitting their initial dispositions between Chemulpo, Vladivostok, and Port Arthur, as well as their large Baltic fleet.

Not only did some observers and commentators disclaim the central importance of their own branch of service, they even made proscriptive and explicit resource tradeoffs. Captain Judson of the US Army Corps of Engineers, actually advocated for more naval and merchant marine spending especially within the United States.

Perhaps the fact most obviously shown is that expansion of territory or of influence far from the seat of a nation’s military strength is a very dangerous proceeding unless long-distance transportation facilities be plentifully developed and the line of

⁵²⁵ Brevet-Major W. D. Bird, *Lectures on the Strategy of the Russo-Japanese War* (Hugh Rees, 1911), page 19.

communications be perfectly protected. Applied to our own case... this means a large navy, and transportation facilities far in advance of those that could be furnished by our mercantile marine. The navy, with perhaps too halting steps, we are now building. It appears that open transport adequate in time of need can only be secured by permitting American registration of foreign-built ships, or providing some form of subsidy to shipping, conditional upon the construction and use of vessels subject to the call of the Government and perfectly adapted to war functions⁵²⁶.

Judson argued that that the Japanese ability to fight the military campaign was dependent upon the speed at which they could transport their armies into Manchuria, the more hulls available the more quickly the armies could be landed and begin to concentrate against the Russian army. Furthermore, this merchant marine, even in the relatively narrow waters of the Yellow Sea separating Japan from Korea, needed naval protection, and the Japanese fleet was not large enough to keep the lines “perfectly protected”. Like other observers, he speculated that the Vladivostok fleet’s interception and sinking of a transport carrying heavy Japanese siege artillery for Nogi’s army delayed the fall of Port Arthur by well over a month. Of course Nogi’s army was besieging Port Arthur, because it was necessary to destroy the Russian Pacific Fleet, based in Port Arthur.

Balanced Influence of Naval and Military Operations

Many observers and commentators stressed the interrelation betwixt the services, and their joint responsibility for the ultimate course of the Russo-Japanese War. These observers often spoke at the level of the strategy of the campaign, and not the conduct and tactics of particular battles. Major General Aston, Royal Marines, urged his reader to

⁵²⁶ William V. Judson report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 3) (US Government Printing Office, 1907) page 205.

refer to your Clausewitz on this subject. I hope that I am not doing so too often, and I wish that a similar book had been written with the words 'fleet and army' substituted for the word 'army' in every case, and 'naval and military force' substituted for 'military force,' because of the utility of such a book to students of the only strategy which can be applied by island Powers⁵²⁷.

While noting that the ultimate effect of fleet action is military action, Aston is reluctant to risk the fleet for purely military ends, and disregards Russian attempts to do so. The Japanese Navy "did not prevent the Russian second class cruiser *Novik*, and other vessels, from inflicting considerable loss upon the left flank of the Japanese army during its advance; but Admiral Togo could hardly have been expected to subject his reduced fleet to probably further loss from submarine mines, and the ultimate result justified his action"⁵²⁸. The balance that Aston describes is one in which each service plays a distinct role and supports each other *strategically*, not tactically⁵²⁹.

In his preface to his book on the strategy of the whole war, Captain F R Sedgwick argues that "the victory fell to Japan, because both Navy and Army were ready; it is to be hoped that the moral will not be lost on the British public"⁵³⁰. Sedgwick's book, despite being focused by choice on the military aspects of the Russo-Japanese War, makes sure to

⁵²⁷ Major-General Sir George Aston, *Letters on Amphibious Wars* (John Murray 1920) page 219. Aston often references Clausewitz, but stresses how the writer's ideas were broader than he may have himself realized, and are informative for understanding naval and amphibious warfare, as well as purely military conflict.

⁵²⁸ Major-General Sir George Aston, *Letters on Amphibious Wars* (John Murray 1920) page 317.

⁵²⁹ Indeed, this was a common theme. Most observers dismissed the effects of naval gunfire on military operations, even against fixed targets such as those in Port Arthur. The one action where naval gunfire probably was important, if not decisive, was Nan-shan, where Japanese gunboats flanked Tretyakov's position on the peninsula. Yet, as observers were at pains to describe, these were coastal defense gunboats, and not cruisers or battleships.

⁵³⁰ Captain F. R. Sedgwick, *The Russo-Japanese War on Land: A Brief Account of the Strategy and Major Tactics of the War* (Foster Groom & Co, 1906) preface (no pagination).

acknowledge up front the equal contribution of the navy, without which the military operations would not have been possible.

Major Kuhn witnessed the frustrating siege of Port Arthur, where the fire of unsuppressed entrenched machine guns and artillery were “murderously effective”⁵³¹. However, he did not see much utility in naval assistance for the bombardments, especially when he felt the Japanese had other, more important, uses for their fleet.

With regard to the effects of ships’ fire on seacoast forts, there was a total absence of evidence of any certain bombardment by the ships... From their [Russian prisoner of war and Japanese veteran] statements it appears that the Japanese fleet did frequently bombard, but their fire was directed against the ships in the harbor⁵³².

The British Official History is blunt. With regards to Vitgeft’s command of the Pacific Fleet the history noted it was “the abnegation of true leadership, and the accounts of the deliberations in Port Arthur show nothing more clearly than the failure of the Russian naval officers to realize that the supreme object of their existence was to assist in the defeat of the Japanese field army”⁵³³.

⁵³¹ Joseph Kuhn report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 2) (US Government Printing Office, 1906) page 128.

⁵³² Joseph Kuhn report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 2) (US Government Printing Office, 1906) page 178.

⁵³³ Great Britain Committee of the Imperial Defence (Historical Section) *Official History (Naval and Military) of the Russo-Japanese War Volume 1: To August 1904* (His Majesty’s Stationary Office 1910) page 395. This clearly reflects the conclusions of Sir Julian Corbett’s own classified study for the Admiralty.

Rowan-Robinson focused on the interplay of the two services with regard to Port Arthur. He argued that the Japanese objective at Port Arthur was to destroy the fleet, thus ensuring command of the seas. However that destruction could be accomplished either at sea or by taking the port from the land side⁵³⁴. In examining Togo at the battle of the Yellow Sea, he noted that

it is desiring to point out that the course followed by him necessarily exercised a considerable influence over the operations of Marshal Oyama... A couple of divisions withdrawn from General Nogi and transferred northwards might obviously make a vast difference in the great battle which was shortly to be expected [Liao-yang]. They might well make the difference between defeat and victory, or between a mere tactical success and the decisive overthrow of Kuropatkin. It was decided, therefore, to attempt the capture of the fortress by assault⁵³⁵.

Thus, due to the ability of Vitgeft's fleet to escape after Vitgeft's death at the Yellow Sea, the Japanese had to try and force Port Arthur by land in order to then transfer the 4th Army north to Liao-yang.

In their analysis of the battle of the Yalu and first phases of the Russo-Japanese War the German study recognized the importance of naval operations in moving the army, and recognized that a naval defeat would lead to an overall defeat (though a naval victory would not necessarily lead to an overall victory). As already noted the Germans believed, however, that the decisive moment of the war was the Russian withdrawal from Liao-yang⁵³⁶.

⁵³⁴ Initially it was felt that the fleet could be sunk by Japanese artillery while at anchor, but that proved not to be the case for most of the siege. Indeed, it was only after they Japanese were firmly established on 203-Meter Hill that they were able to get good spotting for their guns, and shortly thereafter artillery sank the fleet, except for Von Essen's detachment that fled.

⁵³⁵ Major H. Rowan-Robinson, *The Campaign of Liao-Yang* (Constable & Co 1914), page 166.

⁵³⁶ German General Staff (Historical Section) *Liao-yan* [sic] Lieutenant Karl von Donat (editor and authorized translator) (Hugh Rees, 1913) pages 208.

But to venture on a landing on the continent at all, Japan needed, in addition to her mobilized army, a strong fleet as well. The idea that Japan would want an up-to-date navy if she wished her voice to be listened to abroad was so obvious on account of her insular position, that the efforts of the newly awakening country to create a navy, in spite of her limited resources, took shape indeed sooner than her efforts for creating an army. These endeavours commenced about the year 1870, and continued, at first with the guidance of British naval officers, during the seventies and eighties. At the time of the war with China, Japan possessed already a small but efficient fleet, which proved its thorough value in the action on the Ya-lu against the superior Chinese ships... At the cost of £23,500,000, which is small when compared to what had been achieved, but enormous considering Japan's resources, a fleet was ready to strike at the end of 1903... The Japanese battleships surpassed the Russian in size, speed, and artillery. This advantage, and the marked superiority in efficient armoured cruisers, secured Japan a preponderance over the Russian warships in the Far East⁵³⁷

Even the “prophet” of seapower, Alfred Thayer Mahan, who largely came down on the view that Japanese seapower won the war, recognized some elements of jointness between the services. In a lecture entitled “Discussion of the Russo-Japanese War,” Mahan criticized narratives that naively argued that “in each case, coöperation between the two arms, fleet and coast-works, is characterized by a supremacy of one or the other, so marked as to be exclusive. Coördination of the two, *which I conceive to be the proper solution*, can scarcely be said to exist [emphasis added]”⁵³⁸. Yet Mahan elsewhere emphasizes that without the decisive naval victory first, the military operations could not win the war⁵³⁹. Even after the Russians retreated from Mukden, it wasn't until the Japanese destroyed Rozhdestvensky at Tsushima that the Russians began to consider a negotiated settlement. And yet after

⁵³⁷ German General Staff (Historical Section) *The Ya-lu* Lieutenant Karl von Donat (editor and authorized translator) (Hugh Rees, 1913) pages 102-103.

⁵³⁸ Captain Alfred Thayer Mahan, *Naval Strategy: Compared and Contrasted with the Principles and Practice of Military Operations on Land, Lectures Delivered at the U S Naval War College, Newport, R I, between the years 1887 and 1911* (Little Brown & Company, 1911) page 385.

⁵³⁹ Captain Alfred Thayer Mahan “Discussion of the Russo-Japanese War,” *Naval Strategy: Compared and Contrasted with the Principles and Practice of Military Operations on Land, Lectures Delivered at the U S*

Tsushima they had amassed, north of Mukden, an army that was hitherto the largest Russian army in Manchuria. They never used this army, and the Japanese never attacked it. So while Mahan did indeed recognize the balance in some passages of his work, he also tended to favor the Navy if pressed to isolate the decisive element of the Russo-Japanese War.

Summary: Service Competition and the Lessons of the Russo-Japanese War

The results of the analysis of observers and commentators on the Russo-Japanese War do not support a bureaucratic interest-based approach towards learning. A bureaucratic interest-based explanation would expect to see the two services, army and navy, jockeying for prestige and resources by telling different narratives about the relative importance of the services in explaining the outcome of the Russo-Japanese War. This was not the case. Instead most observers stressed the interrelation betwixt the services, and their codependencies upon one another for achieving success for either Russia or Japan. For those observers that did choose one service as more influential than the other, the results still do not suggest much explanatory power for interest-based explanations. Some army officers suggested that the navy was, in this instance, the more important service, and even suggested that the resource allocation in their home country needed to be shifted away from the army to the favor of the navy.

These results do not engender confidence in the bureaucratic interest-based explanations. However it is possible to argue that the level of analysis may be too high. Perhaps the

important division is not between the services, but among the arms within a service. The next section will explore that proposition in more detail.

Differences Between Arm of Service

Interest-based explanations of learning would suggest that within a branch of service, the various arms should jockey for primacy. The dominant arm would likely acquire a disproportionate share of peacetime resources, influence, and prestige within the army. Observers and commentators should, therefore, be expected to favor their own arm wherever possible. They should certainly not be expected to suggest that other arms are dominant, as this would justify resource and prestige shifts away from their own branch. Per Sapolsky's concern with organizational autonomy, it would also be unlikely for military observers motivated by self interest to suggest an explicitly joint concept of battlefield dominance, as this surrenders autonomy to the other equally dominant arm.

The fifty-two primary source documents from serving military authors all had the opportunity to pass judgment on the emergence of a dominant arm within the army. Where a writer claimed his own arm to be decisive, that was coded as correctly predicted. Where he stated another arm to be decisive, that was coded as *incorrectly* predicted. When an observer failed to claim dominance for any arm, or claimed a joint dominance, that was coded as *not correctly* predicted. An observer failing to advance his own arm is not an insurmountable problem for bureaucratic interest based explanations, but an observer touting the decisiveness of another arm indicates a more serious weakness. The results are tabulated below.

Chart 4 – 3 Summary of Arm of Service Results

Arm of Service	Stated Dominant Arm					Total
	Artillery	Cavalry	Infantry	Combined	None	
Artillery	2		2	3	5	12
Cavalry	1	2			4	7
Infantry	3				3	6
Other*	3		1	4	19	27
Total	9	2	3	7	31	52

Stated Dominant Arm of Army				
None Stated	Combined	Own Arm	Other Arm	Other
31	7	4	6	4

*Other includes documents written by other functions (intelligence, engineering, etc), documents written anonymously, and documents written by multiple authors

	Stated Dominant Arm of Army				
	None Stated	Combined	Own Arm	Other Arm	Other
	31	4			4
Staff Officers	19	4			4
Line Officers	12	3	4	6	

These results suggest problems for the bureaucratic interest-based explanation. Of the fifty one documents coded, only four followed a pattern consistent with the interest-based approach. Five documents explicitly violated the prediction, by ceding primacy to other branches. Another three documents recognized the emergence of a dominant combined arms model, effectively an infantry-artillery model. Twelve reports were written by officers that identified their own arm of service, but didn't explicitly acknowledge any model of dominance in combat. Another twenty seven documents were written jointly, written anonymously, or written by officers from other branches, including engineers, intelligence officers, and other staff functions. If we exclude these, we are still left with twenty five documents written by officers of the combat arms, only four of which offer potentially confirming evidence, six of which offer strongly disconfirming evidence, and fifteen of

which offer more mildly disconfirming evidence about the importance of the bureaucratic interest based explanation. While the aggregate numbers suggest problems for the approach, many of the actual quotations are more damning.

Towards Dominance of the Battlefield

This section examines the opinions that crystallized around artillery, infantry, and cavalry in the Russo-Japanese War. Some felt that individual arms would be decisive in and of themselves, while others argued that only with combined arms could true dominance emerge. What is striking about many of these arguments is that they were not made by partisans for their own branch, but by members of other arms who argued that their own branch needed to cede some role, prestige, funding, and autonomy to the others to avoid being destroyed in battle.

Major J. M. Home, an infantry officer with the Gurkhas⁵⁴⁰, was clearly impressed by artillery.

He wrote that

the great impression made on my mind by all I saw is that artillery is now the decisive arm and that all other arms are auxiliary to it. The importance of artillery cannot be too strongly insisted upon, for, other things being equal, the side which has the best artillery will always win. Better artillery tactics may make up for inferiority in armament, as it has very largely done in Manchuria... *So strongly am I convinced of the immense importance of artillery that it seems almost a question for deliberate consideration whether artillery should not be largely increased even at the expense of the other arms. Infantry can, if necessary, be trained in about three months, whereas artillery cannot be so improvised* [emphasis added]⁵⁴¹

⁵⁴⁰ The Gurkhas were a crack group of extremely tough assault infantry raised by the British in India and Nepal.

⁵⁴¹ Home "General Report on the Russo-Japanese War up to the 15th August 1904," November 1904, Great Britain Committee of the Imperial Defence (Historical Section) *The Russo-Japanese War: Reports from British Officers Attached to the Japanese and Russian Forces in the Field* (volume three, His Majesty's Stationary Office, 1908) page 209.

Not only does the quotation cede primacy to a rival arm, Major Home explicitly recognizes the resource tradeoff which logically follows from such an observation, and encourages that tradeoff. Major Hume was not the only officer to make such a suggestion. Captain William Judson, despite being with the United States Army Corps of Engineers, advocated for a greater portion of the peacetime budget to go to artillery as opposed to the other branches. He argued that “it [artillery] is beyond nearly all others a special service, which can not be improvised in time of war. It would appear that in peace we should have a very large proportion of the field artillery we shall need in war”⁵⁴².

Captain Carl Reichmann, an officer with the US 17th Infantry Division, argued that the war demonstrated the power of artillery compared to other branches of service, including his own, and, like Home and Judson, suggested shifting resources away from other arms to support increased artillery procurement and support.

The power of artillery being so great it would be foolish indeed for a government not to avail itself of the advantage thus offered, and I believe that as a result of this war there will develop everywhere a tendency to relatively increase rather than decrease the proportion of artillery and its supply of ammunition. A nation that enters to-day upon war with palpable inferiority in artillery incurs the gravest risks⁵⁴³

General de Négrier argued that the destructive power of artillery on exposed targets was impressive, though not itself enough to win a battle.

⁵⁴² William V. Judson report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 3) (US Government Printing Office, 1907) page 214.

⁵⁴³ Carl Reichmann report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 1) (US Government Printing Office, September 1906) pages 269-270.

[T]he Japanese artillery was brought into action and fired for 15 hours without a break. The Russians only brought up two regiments of infantry and a few batteries. After the cannonade the Japanese pushed their infantry forward. It was nearly wiped out by the fire of the enemy's guns, when the Russians committed the blunder of making a counter-attack with the bayonet. In a few moments one regiment alone lost 500 men, the remainder being forced to lie down on the spot in order to avoid total annihilation. They were unable to fall back till night⁵⁴⁴.

Yet while he argued that artillery was not in itself decisive, it was, in conjunction with infantry, possible to achieve limited advances. "Heavy artillery and mortars are now indispensable to armies in the field. It is absolutely necessary that this fact should be recognized. The same remark applies to machine-guns. Infantry, no less than cavalry, must be provided with them. They are always of use"⁵⁴⁵. General deNégrier argued that artillery's prominence would be checked, to some extent, by the ability of infantry and artillery to mask themselves from sight, or, in the parlance of the modern tactical system, to use cover and concealment to deny the firing unit a targeting opportunity. He argued that advanced technology had

created an impression that the part it [artillery] will play in the battles of the future must be absolutely decisive. It will be nothing of the kind. *Its part will be important, but not conclusive.* The powers of destruction exercised by the latest type of gun on exposed troops have produced this immediate result, that, both in the attack and the defence, the men take excellent care to keep out of sight by sinking trenches and raising earthworks [emphasis added]⁵⁴⁶.

Yet artillery was not universally recognized as the dominant arm. Many artillerymen argued that their own arm was either subordinate or equal to the infantry in a combined arms

⁵⁴⁴ General Francois Oscar de Négrier, *Lessons of the Russo-Japanese War* translated with permission by E. Louis Spiers (Hugh Rees, 1906) page 51.

⁵⁴⁵ General Francois Oscar de Négrier, *Lessons of the Russo-Japanese War* translated with permission by E. Louis Spiers (Hugh Rees, 1906) page 54.

⁵⁴⁶ General Francois Oscar de Négrier, *Lessons of the Russo-Japanese War* translated with permission by E. Louis Spiers (Hugh Rees, 1906) page 42.

framework. Despite being an artilleryman, Rowan-Robinson not only acknowledged the navy's decisive role strategically (see discussion above), but unequivocally ceded the tactical primacy to the infantry.

To deal with the performances of infantry on either side would be but to repeat the history of the war. In no campaign has it been more clearly made manifest that *the infantry is the principal arm in battle...* Upon the infantryman falls the bulk of the labour, of the danger, of the loss, and, above all, of the responsibility. The guns may thunder and the squadrons may charge, but if the infantryman fails all else will fail with him, *and with the responsibility should go the honour*. His place is on the right of the line. As for the gunner, his role is to support the infantryman in every circumstance and in every change of circumstance. In one way or another the latter must get forward and the gunner must help him to do it [emphasis added]⁵⁴⁷.

Lieutenant Colonel Oliver Ellsworth Wood of the US Army, a former military attaché to Japan and an artilleryman commented on the impotence of destructive artillery fire against field fortifications. At Nan-shan the Russian position was characterized by

sheltered trenches for rifle fire were constructed; and in front of these works a great number of mines and a net-work of barbed-wire entanglements were placed, the spaces between being occupied by machine guns. The whole of [the Japanese] artillery tried hard to destroy these works, and assisted the advance of the infantry by changing the positions of the guns nearer and nearer to the enemy. Owing, however, to the strong resistance of the enemy's infantry, the situation remained unchanged⁵⁴⁸.

When facing such an imposing situation Wood recommended that the attacker "must first silence the enemy's guns, and then dispatch the infantry, led by engineers armed with shears and other tools for clearing the entanglements; but as long as the enemy retains any available guns or rifles the feat cannot be performed without heavy loss of men"⁵⁴⁹. For the actual storming of the trenches Wood recommended plunging shots, implying howitzers and

⁵⁴⁷ Major H. Rowan-Robinson, *The Campaign of Liao-Yang* (Constable & Co) 1914 page 269-270.

⁵⁴⁸ Lieutenant Colonel Oliver Ellsworth Wood, *From the Yalu to Port Arthur: An Epitome of the First Period of the Russo Japanese War* (Franklin Hudson 1905) pages 32-33.

⁵⁴⁹ Lieutenant Colonel Oliver Ellsworth Wood, *From the Yalu to Port Arthur: An Epitome of the First Period of the Russo Japanese War* (Franklin Hudson 1905) page 37-38.

mortars (and indirect fire). Here was another artilleryman noting that artillery was a subordinate part of a combined arms attack, and that by itself artillery could not defeat even hastily constructed fixed fortifications.

American artilleryman Lieutenant Donald Armstrong, writing in the *Field Artillery Journal*, the official publication of the United States Field Artillery Association, translated a number of German sources dealing with the role of artillery. He cites German artilleryman von Teil approvingly when he wrote that “Artillery must select the position which will be of benefit to all, and not one that would keep itself intact, and useless to the Infantry. The motto of the artillery in this respect must be: ‘sacrifice yourself if you must and save yourself if you can’”⁵⁵⁰. Not only was artillery subordinate to the infantry, but this author recognized that subordination meant that artillery should be prepared to risk its existence in support of the infantry mission.

The nature of combined arms was such that Sedgwick, while an artilleryman, advocated *merging* his own branch into the other two branches, thus directly contravening the interest in autonomy central to Sapolsky’s theory. “The Japanese do not separate their Artillery from the intimate knowledge of the other arms in the way that we do in the English Army”⁵⁵¹. He notes that the English separation of the Artillery branch has been proven “unsound” and

⁵⁵⁰ Lieutenant Donald Armstrong, (translation and introduction). “Activity of Field Artillery in the Russo-Japanese Campaign, and the Influence of the War Experience on the Use of Artillery Today,” *The Field Artillery Journal* 3:4 (October-December 1913) (Consists of translations of fragments from German sources) page 566.

⁵⁵¹ Captain F. R. Sedgwick, *The Russo-Japanese War on Land: A Brief Account of the Strategy and Major Tactics of the War* (Foster Groom & Co, 1906) page 150.

recommends that three batteries be grouped into battalions “posted to each brigade of Cavalry or Infantry, and made as much an integral part of that Brigade as the Battalions of Infantry or the Regiments of Cavalry composing it, *this severance of arms would end* [emphasis added]”⁵⁵². He stresses that this integration would be good for all of the arms and that “the Infantry would look upon the Artillery as an integral part of their own body, not as an outside and somewhat strange force”⁵⁵³

While withholding judgment about the ultimate value of the various arms, the US War Department history notes that at Liao-Yang the Russian cavalry detachment of over 1,000 men was involved in a four hour skirmish with the Japanese. This was inconclusive and the Russians retired “with a loss of 1 killed and 13 wounded”⁵⁵⁴. Figures of this sort do not suggest that the cavalry found much use on the battlefield. The issue comes up again during their discussion of Mishchenko’s raid. This raid involved sixty-three *sotnias* (squadrons), as well as twenty-two units of horse artillery, in all a force of over seven thousand soldiers. After a chronological narrative of field operations, the section concludes by noting that “during the raid the Russians captured 1 officer, 14 men, and about 500 provision carts. They reported their losses as 39 officers and 331 men killed, wounded, and missing”⁵⁵⁵. The War Department’s *Epitome* is simply a narrative of field operations and collection of

⁵⁵² Sedgwick, *The Russo-Japanese War on Land* (op cit) page 150

⁵⁵³ Sedgwick, *The Russo-Japanese War on Land* (op cit) page 150

⁵⁵⁴ United States War Department: General Staff. *The Epitome of the Russo Japanese War* (US Government Printing Office 1907) page 50.

⁵⁵⁵ United States War Department: General Staff. *The Epitome of the Russo Japanese War* (US Government Printing Office 1907) pages 96-97.

statistics, offered without comment. The US observer reports, however, offer far more explanations, interpretations, and opinions.

The behavior most clearly associated with the organizational interest-based predictions was that demonstrated by cavalry officers. American cavalry officer Lieutenant-Colonel Edward McClelland spoke out strenuously for his service, arguing that Manchuria showed “that the permanent assignment of cavalry to divisions of infantry was a mistake, and that in this way its usefulness was frequently frittered away”⁵⁵⁶. He went further, arguing against the mounted infantry concept by cautioning that “we may not find ourselves in the position of Early⁵⁵⁷ in the Shenandoah Valley when he said his mounted infantry could not meet Sheridan’s cavalry because they had no sabers”⁵⁵⁸.

Specifically within the narrower area of cavalry there was some degree of predictive success. The not insignificant personage of General French wrote, in 1914, that the experiences of the Russo-Japanese War and other recent wars supported the primacy of cavalry when set against other branches. “My opinion upon this point is that every plan should be subordinate to what I consider a primary necessity- names the absolute and complete

⁵⁵⁶ Edward J. McClelland report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 3) (US Government Printing Office, 1907) page 114.

⁵⁵⁷ Confederate General Jubal A. Early

⁵⁵⁸ Edward J. McClelland report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 3) (US Government Printing Office, 1907) pages 101-102.

overthrow of the hostile cavalry. So long as that cavalry remains intact with its *morale* unshaken, all of our enterprises must of necessity be paralysed [sic]”⁵⁵⁹.

In the German history, it is the fear of a successful cavalry attack that plays an important role on occasion, usually by causing the Russians to retreat prematurely, but that fear is never realized⁵⁶⁰. To some extent the cavalry becomes analogous to the fleet in being. This “cavalry in being” represents a contingency that both belligerents must always contend with and prepare for, even if the cavalry attack never comes. However, the Germans go on to note that improved reconnaissance, and increased confidence in defeating a cavalry attack with a smaller force, will steadily diminish this threat.

Not only did cavalry officers suggest that their branch was the central branch, but they also argued that failures in the Russo-Japanese War were caused by cavalry abnegating its natural role as the shock arm on the battlefield by adopting mounted infantry tactics. Asiaticus, a pseudonym for someone believed to be a German cavalry officer (and translated into English by a British cavalry officer), traced the ineffective results of Russian cavalry back to their rifle training, noting disparagingly that “the Cossacks in peace were little trained for reconnaissance, and were devoted to shooting in civilian life, on the appearance of the enemy they sought their highest salvation in instinctive recourse to their rifles”⁵⁶¹

⁵⁵⁹ Field Marshall Sir John D. P. French, “Preface” in General Friedrich von Bernhardt, *Cavalry* (George H. Doran Company, 1914) page 13.

⁵⁶⁰ German General Staff (Historical Section), *The Battle of Mukden* Lieutenant Karl von Donat (editor and authorized translator) (Hugh Rees, 1906) page 52.

⁵⁶¹ “Asiaticus” [sic] *Reconnaissance in the Russo-Japanese War* (translated from German by J. Montgomery, 3rd Hussars) (Hugh Rees, 1908) page 15.

The most pernicious effect of dismounting, according to advocates of shock tactics, was the way it sapped the cavalry's offensive spirit.

Within the moment of... deploying for dismounted action all offensive spirit tended to disappear. They all dismounted and allowed themselves to be held by a weak Japanese force, instead of pushing on the reconnaissance with the main body... In this fight the Cossack of to-day has shown that his offensive spirit only goes as far as undertaking an enterprise when success is apparent; that his favorite weapon is no longer the sword and dirk, but the rifle; and that it is easier to keep these unruly and feared hosts at arm's length than was generally thought possible⁵⁶².

Thus Asiaticus simultaneously acknowledges the failure of Russian cavalry, but attributes it to dismounted tactics, which destroyed offensive spirit. The allure of the mounted infantry role was also quashed by General French, who wrote that "...this book, which provides a strengthening tonic for weak minds which may have allowed themselves to be impressed by the dangerous heresies to which I have alluded"⁵⁶³. Asiaticus and French were echoed by General Ernest F Orton, writing as "Notrofe", who argued

The Russian cavalry (?) [sic] in Manchuria discarded their lances and swords. Their leaders had no faith, apparently in shock tactics. They believed, apparently, that the rifle is everything and the rest nothing. A blind faith in the rifle appears to have, as a natural corollary, the atrophy of the sense of mobility⁵⁶⁴.

Acknowledging the importance of combined arms, Asiaticus was careful to note cavalry's position as *primus inter pares*

the object of the assignment of infantry was to help the cavalry in the actual fight, as well as to leave at the commander's free disposal the already small force of cavalry,

⁵⁶² "Asiaticus" [sic] *Reconnaissance in the Russo-Japanese War* (op cit, 1908) pages 35-36.

⁵⁶³ Field Marshall Sir John D. P. French, "Preface" in General Friedrich von Bernhardi, *Cavalry* (George H Doran Company, 1914) page 8.

⁵⁶⁴ General Ernest Frederic Orton, (under the pseudonym "Notrofe") *Cavalry Taught by Experience: A Forecast of Cavalry under Modern War Conditions* (Hugh Rees, 1910). Copy annotated by Major the Honourable Hugh Dawnay, DSO., page 63.

and to facilitate the uninterrupted reconnoitering even during the course of an engagement... the co-operation of these arms alone made it possible to achieve such unexpected [favorable] results⁵⁶⁵.

He goes on to conclude “when supported by infantry, the cavalry brigades were always able to carry out their task and always answered all expectations”⁵⁶⁶

Yet not even the cavalry officers unanimously rallied around their arm. One of the strongest indictments against cavalry comes from one of their own, Captain Jardine of the 17th Lancers, observing for the British Army. After reviewing a number of dismounted firing actions and aborted shock actions, he laments

if there is any other explanation of these facts than that suggested in my report, namely that a body of cavalry armed with modern rifles can deny to their opponents all opportunities of executing a charge with any prospects of success, then, so far, I have not heard it put forward... The country fulfills all the conditions for a successful application of shock tactics to an extent which I have never seen equaled... Notwithstanding these facilities there have been no shock tactics, and what has been done by cavalry has been done by Japanese machine guns and carbines and Russian horse artillery⁵⁶⁷.

Jardine recoils, however, from the notion that Cavalry should lose their *arme blanche*, instead he argues that they should be primarily trained with the rifle, while maintaining the sword. The sword, he argued, comes in useful when dismounted cavalry is put in to close combat. The converse (and then prevalent) system of focusing strictly on the *arme blanche* and shock tactics created a cavalry that ponders

where they may deliver a charge than of how they may employ their mobility to enable them to use their rifles with the best effect. I have watched thousands of men

⁵⁶⁵ “Asiaticus” [sic] *Reconnaissance in the Russo-Japanese War* (op cit, 1908) page 98.

⁵⁶⁶ “Asiaticus” [sic] *Reconnaissance in the Russo-Japanese War* (op cit, 1908) page 133.

⁵⁶⁷ Jardine “Report on the Japanese Cavalry in the Field” 16 November 1904, Great Britain General Staff: War Office *The Russo-Japanese War: Reports from British Officers Attached to the Japanese and Russian Forces in the Field* **Marked Confidential** (volume one, no publisher, 1905) page 334.

trained on this system through my glasses during the Battle of the Shaho. There they were sitting idle on their horses whilst infantry and artillery were fighting for their lives, waiting for an opportunity to charge which never came, whilst hundreds of opportunities to do good service with their rifles passed unheeded by them⁵⁶⁸.

Summary: The Arms and Battlefield Dominance

No patterns that emerge from the data are consistent with interest-based explanations of learning. There was no single branch that emerged as the consensus choice for dominance, even if those records that do not express a preference are excluded. Some cavalrymen, infantrymen, artillerymen, and staffers felt that artillery was the dominant branch, and should receive a greater share of the peacetime budget, prestige, and attention. Yet some artillerymen actually demurred, offering up visions of combined arms or even of infantry primacy, with artillery offering close support. Cavalry's only defenders were those of the cavalry arm, but even all cavalry officers did not come out in support of their arm's preferred position. It is true that the defense mounted by cavalrymen for their position was what organizational theory would predict. The failure of cavalry as an arm in the Russo-Japanese War was due, they argued, to their failure to act like the cavalry arm, and to instead adopt the role of mounted infantry. By abnegating their cavalry role it became impossible to use the failure of cavalry in the Russo-Japanese War to impugn the overall performance of cavalry. However the narrow success in the field of cavalry must be set against the failure to explain the other behaviors regarding the other branches.

Analysis: The Bureaucratic Interest-based Research Program

⁵⁶⁸ Jardine "Report on the Japanese Cavalry in the Field" 16 November 1904, Great Britain General Staff: War Office *The Russo-Japanese War: Reports from British Officers Attached to the Japanese and Russian Forces in the Field* **Marked Confidential** (volume one, no publisher, 1905) page 335.

The bureaucratic interest-based model has had very limited success in one area, but has suffered serious reverses in areas where it would have been expected to perform strongly. At the highest level bureaucratic interest correctly predicts the military's concern with "guns versus butter" trade offs in national security planning, as well as predicting the military's disapproval of civilian control in the conduct of war.

Specifically, the Russian choice to invest in the commercial development of Dalny prior to the completion of the fortifications around Port Arthur, the trans-Siberian railway section around Lake Baikal, trans-Siberian railway sidings, and the double tracking of the mainline south of Mukden was an area subject to almost universal criticism, and one that did not produce a single defense. The Japanese decisions to build a battlefleet and raise an army, despite deterioration in credit, were generally lauded. However some observers, notably the British, were concerned about the burdens that such a policy could impose, but their concerns were not raised to the level of criticism.

On the issue of civilian control, the dual command structure of Kuropatkin and Alexieff, early in the war was raised as an ongoing problem within the literature. The Czar's efforts to attempt to moderate, though not resolve, this dispute were also subject to criticism. In contrast the hands-off policy of the Mikado in Japan, and the unified military command practiced by the Japanese in Manchuria, were praised.

This is certainly non-disconfirming evidence that could be interpreted in favor of the bureaucratic approach. However, as we have only examined the military literature this evidence is not persuasive, and we would be unjustified in drawing any affirmative

conclusions on the basis of this weak result. Indeed, this finding is also consistent with a Bayesian approach. Without examining civilian sources we cannot really claim to have more than flimsy evidence supporting the bureaucratic interest-based research program. We have failed to falsify the predictions on this level, but that is not a high bar to clear.

When we raise the bar and probe the bureaucratic interest-based approach further, the results are not encouraging. The next level down is to examine divergence between naval and military observers and literature. There is scant evidence to suggest a division here.

While there was a divergence among writers about the relative importance of the naval and military spheres of operations in the Russo-Japanese War, these differences did not coincide with branch of service. Some naval observers acknowledged at least a coequal responsibility with military operations, while a number of military observers tipped their hat to the naval aspects of the conflict. Indeed, going further, some military officers suggested that one lesson of the Russo-Japanese War was that their own countries should shift resources *towards* the development of naval assets.

Below the level of the service is the arm within the service. As noted, the naval observers were all effectively of a single arm, naval surface warfare officers, thus there was nothing for us to investigate. However, among the arms of the army we had infantry, cavalry, artillery, engineer, and general staff officers all looking at and commenting upon military operations. To what extent were divergences here reflective of our *a priori* hypotheses? The answer is very little. With the partial exception of cavalry, the different arms did not suggest that the arms had primacy over the others in any pattern resembling the predictions of the interest-

based approach. Much as we noticed an acknowledgement of the mutual reliance of army and navy upon one another at the strategic level, we discovered multiple observers and commentators stressing combined arms assault and defense tactics.

This concentration on combined arms and jointness is doubly problematic for the bureaucratic interest-based approach. Sapolsky argued that there are times when organizations do not pursue concrete resources, but they forgo these resources in order to maximize autonomy. By recommending jointness in strategic planning and combined arms tactics, the observers were simultaneously undermining their self interested arguments for resources *and* for autonomy.

The bureaucratic interest-based approach, importantly, doesn't help us very much to understand the initial puzzles left unresolved by the Bayesian approach. It does offer some resolution to the issue of the suitability of the terrain for shock action and mounted fire. By and large those writers who claimed that the terrain was poor cavalry terrain were horse officers. However even then there were important exceptions, such as Captain Jardine of the 17th Lancers whose independent reports, as well as influence on the two official histories and the classified *Some Tactical Notes on the Russo-Japanese War* document undermined the pure cavalry position.

More importantly, other than the cavalry question, this approach cannot help us to resolve the other puzzles. Differences about the effectiveness of shrapnel do not correlate with the arms of the writers. For example, there is no organizational interest reason why the perception of the degree of Japanese adherence to German infantry assault regulations

would differ in militaries other than, perhaps, within the German military itself (and here there was unanimous agreement). There are no organizational reasons why observers would be driven to different interpretations of the casualty reports at Nan-shan and Liao-yang, other than expecting artillery officers to try and account for more casualties, and again this was not the case⁵⁶⁹.

Conclusion: The Failure of the Bureaucratic Interest Approach

The evidence presented suggests that the bureaucratic interest-based approach is not a good predictor of learning behavior in response to the Russo-Japanese War. At the highest level, that is, at the level of civil-military relations, the best that can be said is that the predictions are not falsified, though they are not subjected to a rigorous test. They thus clear the lowest hurdle. Below the level of civil-military relations the predictions break down. Differences in perception between military and naval observers do not obtain at all. Differences in perception between the arm of service within the armies are often seen between cavalry officers and others, but they do not obtain between infantry and artillery, even on very basic questions of autonomy and resource allocation. Even the difference between cavalry and other branches is not universal, with some cavalry officers finding support for a mounted infantry role, rather than a primarily shock or even dragoon role.

The bureaucratic approach cannot even work as an adjunct to the Bayesian approach, i.e., as an *ad hoc* alternative theory to be resorted to “when Bayes fails”. Of the failures identified in the Bayesian approach, the bureaucratic approach only suggests insight into one aspect, and

⁵⁶⁹ Of course it is possible to make up some convoluted explanation after the fact, but this would not

that is the debate about whether the terrain in Manchuria was suitable for shock or dragoon action. It does not address any of the other puzzles left unresolved by the Bayesian approach. We are thus forced to concede substantial reservations about the explanatory power of this research program.

Chapter 5: The Cognitive Psychological Research Program

“The general failure to appreciate the situation correctly is only to be explained by the darkening effects which are caused by the abuse of maxims, by the endemic tendency to use them crudely as solutions, instead of reasoning by the principles they purport to condense”⁵⁷⁰

“Men’s minds habitually seek refuge in rules, vainly hoping thereby to solve life’s difficulties and dilemmas. As a result, though formalism spells ruin in war, the Russians and Japanese... both paid for their fault by useless sacrifice of life”⁵⁷¹

“Military conservatism, like a cuirass, is impenetrable to anything but an actual bullet”⁵⁷²

In this chapter I will assess the explanatory power of some cognitive based explanations. Cognitive approaches are used in two very different ways. First, some analysts stress the universal tendencies to misestimate probabilities, draw inappropriate conclusions, and otherwise engage in predictable, but faulty, reasoning. For this approach there is no need to reach into the idiosyncratic beliefs and experiences of individuals, as these universal cognitive failings provide a generalized theory of behavior. The second approach builds on the first, but adds the notion that the environment in which the individual operates affects learning by shaping cognitive anchors, metaphors, and analogies. People from different groups, with different anchors, metaphors, and analogies will reason and learn differently. In such an approach cognitive theory becomes the microfoundation for a broader cognitive-cultural approach, which we will develop and discuss more fully in chapter six.

⁵⁷⁰ Sir Julian Corbett *Maritime Operations in the Russo-Japanese War 1904-1905* (Volume 2) (originally a confidential publication of the Committee on Imperial Defence, 1914, republished by US Naval Institute Press, 1994), p 174

⁵⁷¹ Brevet-Major W. D. Bird, *Lectures on the Strategy of the Russo-Japanese War* (Hugh Rees, 1911), page 68.

⁵⁷² Ian-Hamilton, cover letter to Jardine “Report on the Trans-Baikal Cossacks” 11 August 1904, page 309. Great Britain General Staff: War Office *The Russo-Japanese War: Reports from British Officers*

For this chapter I will begin with generalized theories of cognitive effects on learning, and then move on to some of the hypotheses which are rooted in the specific cultural milieu of the observers and commentators. I will stop short, in this chapter, of testing the cognitive-cultural research program, as was developed in the first two chapters. As such this chapter, in isolation, will be an incomplete test of the broad cognitive research program, but will completely test the purely cognitive variant.

The most general hypothesis of the cognitive research program suggested that individuals would use the ultimate victory of Japan to prove the efficacy of the Japanese approach and indict the validity of the Russian approach. Separately we generated from the confirmation bias hypotheses that predicted that observers would seek confirmation of their own existing doctrine in the results of the Russo-Japanese War. The results of our analysis are tabulated in the chart below.

Chart 5 – 1 : Summary of Cognitive Heuristic Findings

Country	Service	Author	Title	Official	Year	J all OK	R all Bad	Support	Criticise
France	Infantry	Cordonnier	Japanese i	No	1912	No	No	Yes	Yes
France	Gen Staff	de Negrier	Lessons	No	1906	No	No	Yes	Yes
GB	Marine	Aston	Amphibious	No	1920	No	No	Yes	Yes
GB	Engineer	Bannerman	Reports	Yes	1906	Yes	No	Yes	Yes
GB	Infantry	Bird	Lectures	No	1909	No	No	Yes	Yes
GB	Cavalry	Birkbeck	Reports	Yes	1906	No	No	Yes	Yes
GB	Artillery	Burne	Liao Yang	No	1936	No	No	Yes	Yes
GB		Childers	Arme Blanc	No	1910	No	No	No	Yes
GB	Navy	Corbett	Maritime O	Yes	1914	No	Yes	Yes	Yes
GB	Navy	Custance	Ship of the	No	1912	No	No	Yes	Yes
GB		Footslogge	Short Acco	No	1925	No	No	Yes	No
GB	Cavalry	French	Cavalry	No	1914			Yes	No
GB	Intelligence	Haldane	Reports	Yes	1906	No	No	Yes	Yes
GB	Infantry	Hamilton	Reports	Yes	1906	No	No	Yes	Yes
GB	Infantry	Hamiton	Liao Yang	No	1936	No	No		
GB	Infantry	Home	Reports	Yes	1906	No	No	Yes	Yes
GB	Artillery	Hume	Reports	Yes	1906	No	No	Yes	Yes
GB	Navy	Jackson	Reports	Yes	1904-05			Yes	
GB	Cavalry	Jardine	Reports	Yes	1906	No	No	Yes	Yes
GB	Infantry	Kearsey	Study of St	No	1935	No	No	Yes	
GB	Engineer	Nicholson	Reports	Yes	1906	No	No	Yes	Yes
GB	Navy	Pakenham	Reports	Yes	1904-05	No	No	Yes	Yes
GB	Gen Staff	Robertson	Arme Blanc	No	1910			Yes	Yes
GB	Artillery	Rowan-Rol	Liao Yang	No	1914	No	No	Yes	Yes
GB	Artillery	Sedgwick	On Land	No	1906	No	No	Yes	Yes
GB	Artillery	Sedgwick	Campaign	No	1912	No	No	Yes	Yes
GB	Staff	Staff	Official His	Yes	1910-20	No	No	Yes	Yes
GB	Staff	Staff	Tactical No	Yes	1906	No	No	Yes	Yes
GB	Staff	Staff	Official His	Yes	1907-10	No	No	Yes	Yes
GB	Artillery	Vincent	Reports	Yes	1906	No	No	Yes	Yes
GB	Artillery	Waters	Reports	Yes	1906	No	No	Yes	Yes
Germany		Asiaticus	Reconnaiss	No	1908	No	Yes		
Germany	Cavalry	Bernhardi	Cavalry	No	1914			Yes	Yes
Germany	Gen Staff	Caemmere	Mukden	Yes	1906	No	Yes	Yes	No
Germany	Gen Staff	Hoffmann	Diares	No	1929		No		
Germany	Gen Staff	Hoffmann	Lost Oppor	No	1929		No		
Germany	Staff	Staff	Mukden	Yes	1906	No	No	Yes	No
Germany	Staff	Staff	Liao Yan	Yes	1913	No	No	Yes	No
Germany	Staff	Staff	Ya-Lu	Yes	1913	No	No	Yes	No
Germany	Staff	Staff	Wa Fan Ge	Yes	1913	No	No	Yes	No
Germany	Staff	Staff	The Scha-l	Yes	1913	No	No	Yes	No
Germany	Staff	Staff	San de Pu	Yes	1913	No	No	Yes	No
USA	Artillery	Armstrong	Activity of	No	1913		No		
USA	Artillery	Arnold	Why the R	No	1930	No	Yes		
USA	Artillery	Hunt	Turning Mo	No	1930	Yes			
USA	Cavalry	Ingram	Use of Cav	No	1931	No	Yes		
USA	Engineer	Judson	Reports	Yes	1907	No	No	Yes	Yes
USA	Engineer	Kuhn	Reports	Yes	1906	No	No	Yes	Yes
USA	Artillery	Maguire	Study of C	No	1930		No	Yes	Yes
USA	Navy	Mahan	Size of Bat	No	1907	No	Yes		Yes
USA	Navy	Mahan	Naval Strat	No	1911	No			Yes
USA	Artillery	March	Reports	Yes	1906	No	No	Yes	Yes
USA	Cavalry	McClernan	Reports	Yes	1907	No	No	Yes	Yes
USA	Navy	McCully	McCully	Yes	1906	No	Yes	Yes	Yes
USA	Infantry	Morrison	Reports	Yes	1906	No	No	Yes	Yes
USA	Infantry	Reichmanr	Reports	Yes	1906	No	No	Yes	Yes
USA	Engineer	Richards	Russian Re	Yes	1930	Yes	No	Yes	No
USA	Staff	Schuyler	Reports	Yes	1906	No	No	Yes	Yes
USA	Navy	Sims	Inherent T	No	1907			Yes	No
USA	Artillery	Wood	Yalu to Por	No	1905	No	No	Yes	Yes

Yes = 3	Yes = 7	Yes = 49	Yes = 39
No = 48	No = 46	No = 1	No = 11

J all OK: Did the Japanese strategy, operations, and tactics go without criticism?

R all Bad: Did the Russian strategy, operations, and tactics go without praise?

Support: Did the author find support for his country's existing doctrine in the Russo-Japanese War?

Criticise: Did the author criticise his country's existing doctrine on the basis of the Russo-Japanese War?

Winners, Losers, and Performance: Praise and Blame in the Russo-Japanese War

One of our hypotheses was that individuals will conflate the ultimate victory and defeat in a war with the relative performance of the tactical systems employed by the belligerents. In essence observers would assume a causal relationship between tactics and outcomes, without critically assessing the performance of tactics themselves. Specifically in the case of the Russo-Japanese War, this would mean that the tactical system of the Japanese would be uncritically praised, while that of the Russians would be criticized and faulted. Upon examination, this hypothesis fails to explain actual events. The Japanese remained subject to criticism on numerous aspects, and aspects of the Russian system were praised.

There are a few example quotes that neatly summarize this conjecture. For example, the high casualties for attacking infantry were shrugged off by Lieutenant-Colonel Hume, Royal Artillery, who argued that the Japanese did not fully suppress or destroy defending artillery prior to launching the assault, thus the assault had to be undertaken along side the artillery dual.. “The Japanese infantry has suffered more losses than it would have its artillery been strong enough to thoroughly prepare its attack, but proof of the pudding is in the eating, and the fact remains that the Japanese have won all their battles”⁵⁷³. Yet even Hume did not go so far as to let the Japanese performance pass uncritically. Indeed almost all observers engaged in some criticism of the Japanese tactical system, and the overwhelming majority also highlighted some high points in the Russian system, despite their ultimate failure.

⁵⁷³ Hume “Field Artillery: with special reference to the Battle of Mukden” 30 May 1905, Great Britain Committee of the Imperial Defence (Historical Section) *The Russo-Japanese War: Reports from British Officers Attached to the Japanese and Russian Forces in the Field* (volume two, His Majesty’s Stationary Office, 1908) page 617.

Criticism of the Japanese

The Japanese faced criticism of their strategy, operations, and tactics, both on land and at sea. The Japanese were criticized for a strategy that was predicated on surprise delivering an enduring advantage, and, following the failure of the initial surprise attack, by remaining committed to the Manchurian offensive and the simultaneous siege of Port Arthur. They were also criticized for their slow operations tempo, both on land and at sea. Tactically they were criticized for high losses and a tendency to telegraph their attacks through a lengthy preliminary barrage.

Brevet-Major Bird criticizes the strategy of Japan, noting

Japan, in the event, possessed decisive preponderance of the force neither in front of Port Arthur, nor in the field. But for the determination of her infantry, and the resolution of her higher commanders, this fact might well have led to disaster. Neither at Liao-Yang, nor at the Sha-Ho, did the Japanese possess sufficient force to gain decisive victories, and the cause of their weakness was the large number of troops that had been absorbed in the siege of Port Arthur⁵⁷⁴.

Along the same lines, Colonel Alexander Kearsy attacked the strategy of the Japanese as being incommensurate with the forces available to the Japanese high command. “They pursued a double objective without the necessary superiority of force... They did not fully appreciate the power of resistance of the Russian troops in Manchuria nor the possibility of the Trans Siberian Railway for bringing up reinforcements and supplies. Their operations were delayed to the advantage of the Russians”⁵⁷⁵. By trying to take Port Arthur by land,

⁵⁷⁴ Brevet-Major W. D. Bird, *Lectures on the Strategy of the Russo-Japanese War* (Hugh Rees, 1911), page 21.

⁵⁷⁵ Alexander H. C. Kearsy, *A Study of the Strategy and Tactics of the Russo-Japanese War Illustrating the Principles of War and the Field Service Regulations* (Gale & Polden 1904) page 2

after the failure of the surprise attack, they weakened Oyama to the extent that he was unable to decisively defeat the Russians and Liao-yang, and yet they failed to provide Nogi with enough resources early on to take Port Arthur. As a result they ended up with the costly siege of Port Arthur lasting to 1905, and they failed to win any decisive battles in the Manchurian interior.

At the tactical level, Rowan-Robinson argued that trading tactical surprise for a longer preliminary artillery bombardment was not wise, although the Japanese were often not punished for making the mistake.

The disclosure of Japanese intentions by the bombardment on the 30th was a grave error. Had Zasluch withdrawn that night he would have escaped scot-free, and his action would be cited for all time as a model in the handling of detachments. On the one side, time gained and a force undiminished ready to repeat the process further north; on the other sixteen days of careful preparation, and a blow in the air⁵⁷⁶.

He recommended that British artillery keep their initial barrages short, and follow up immediately with the infantry assault.

In naval affairs, despite the magnitude of the Japanese victory at Tsushima, they met criticism. Despite its boldness, the initial surprise attack failed to destroy the Port Arthur fleet, and, under better leadership, the Russians could have threatened serious damage to the Japanese⁵⁷⁷. Pakenham, Jackson, McCully, Custance, and Mahan criticized the Japanese inability to close with the Pacific Fleet in the battle of the Yellow Sea. While Corbett defended the Japanese decision not to pursue the Russians at the Yellow Sea, he did join in

⁵⁷⁶ Major H. Rowan-Robinson, *The Campaign of Liao-Yang* (Constable & Co) 1914 page 56

⁵⁷⁷ Indeed, by most accounts it was only after the unplanned death of Makarov, when the *Petropavlovsk* hit a mine, that the Japanese really gained ascendancy over the Pacific Fleet.

the others criticism of Kamimura to not pursue *Gromoboi* and *Rossija* at Ulsan. Mahan was critical of the tactics of both the Russians and the Japanese. While he attacked the entire Russian war plan as flawed, he noted that the Japanese lost two battleships, the *Hatsuse* and *Yashima*, through poor scouting procedures⁵⁷⁸. Like Mahan, Newton McCully criticized the naval tactics of both belligerents, noting that “tactics of both sides seemed bad in beginning, only Japanese improved later, and Russians did not”⁵⁷⁹.

Support for the Russian System

Just as there were criticisms of the Japanese offensive operations, strategy, tactics, and naval operations, there were also various defenses of aspects of the Russian system. All observers commented that the Russian offensives were flawed, both in the lack of leadership and the outdated massed breakthrough tactics that characterized offensive attempts at Wa-fang-gou, the Sha Ho and San-de-pu⁵⁸⁰.

⁵⁷⁸ Captain Alfred Thayer Mahan, *Naval Strategy: Compared and Contrasted with the Principles and Practice of Military Operations on Land, Lectures Delivered at the U S Naval War College, Newport, R I, between the years 1887 and 1911* (Little Brown & Company, 1911) pages 384-385.

⁵⁷⁹ Lieutenant Commander Newton A. McCully, *The McCully Report: The Russo-Japanese War, 1904-1905* (US Naval Institute Press, 1977- reprint of May 1906 Memorandum prepared for the US Secretary of the Navy) page 244.

⁵⁸⁰ On these point see, Lieutenant-General Rudolf von Caemmerer “Comments on the Battle of Mukden,” in Lieutenant Karl von Donat (editor and authorized translator) *The Battle of Mukden* supplement to the *Military History of the Russo-Japanese War* (Hugh Rees, 1906); Lieutenant General Sir Ian Hamilton “Battle of Mo-tien-ling” 25 July 1904, Great Britain General Staff: War Office *The Russo-Japanese War: Reports from British Officers Attached to the Japanese and Russian Forces in the Field* **Marked Confidential** (volume one, no publisher, 1905), pages 216-217; Colonel W. H. H. Waters “General Report on the Experience of the Russo-Japanese War,” March 1905; and Major J. M. Home, “General Report on the Russo-Japanese War up to the 15th August 1904,” November 1904, both in Great Britain Committee of the Imperial Defence (Historical Section) *The Russo-Japanese War: Reports from British Officers Attached to the Japanese and Russian Forces in the Field* (three volumes, His Majesty’s Stationary Office, 1908-1909), volume three.

Russian defensive works were praised by some observers, who argued that Russian entrenchments made frontal assault impossible⁵⁸¹. Hoffmann went to far as to argue that Kuropatkin “in every battle in the Manchurian Campaign had victory in his hand; he only wanted the firm decision to close his hand in order to grasp the victory, but he never had the energy to take this resolve. The Battle of Liauyang [sic] was a typical example... The Japanese frontal attack on Liauyang from the south had miscarried... The Russians had only to attack these points for the fate of the Japanese Army to have been sealed”⁵⁸². As part of an active defense the Russian position and tactics at Liao-yang left little to be desired. However the Russians never executed the shift from defense to offense, and, according to Hoffman, all that they had accomplished in fighting was negated by Kuropatkin’s decision to withdraw.

Even when on a mobile defensive, the Russian army received praise. At the climactic Battle of Mukden, General deNégrier notes that the Russians were poorly deployed, yet credits their tactical discipline. “The army of General Kaulbars had been forced to change its front, while still actually engaged, thus giving proof of its remarkable cohesion. The Japanese were only able to make headway against it to the extent of little over 3 miles”⁵⁸³.

⁵⁸¹ Please see the review of the relevant reports in the discussion of hasty entrenchments and rates of advance in my Chapter Three.

⁵⁸² Major General Max Hoffmann, *The War of Lost Opportunities* (translated by A. E. Chamont, originally published by Keegan Paul, Trench, Trübner & Co, reprinted by the Naval and Military Press Ltd, 2004) p 12.

⁵⁸³ General Francois Oscar de Négrier, *Lessons of the Russo-Japanese War* translated with permission by E Louis Spiers (Hugh Rees, 1906) page 35

The Russian Navy, however, was less receiving of credit. The only positive descriptions of Russian naval efforts came about as acknowledgements of Rozhdestvensky's seamanship in bringing the fleet half way around the globe (where it was then sunk) and Marakov's short tenure in command of the Pacific Fleet. Captain Von Essen, who commanded the *Sevastopol*, was praised for his decision to break with the Russian command and take his ship out of Port Arthur once 203 Meter Hill fell, and for his decision to destroy the ship rather than surrender. Admiral Jessen, with the Vladivostok squadron, faced strategic criticism as according to all observers there never should have been an independent Vladivostok squadron, yet given that there was such a unit he handled it well. As far as praise goes, this was all very tepid.

Summary: False Causality

This heuristic fails the tests set out earlier in the dissertation, and fails it by a wide margin. Contrary to initial expectations, most observers and commentators were critical of the Japanese strategy, operations, tactics and naval operations. Furthermore, many observers highlighted things that the Russians did well, though they concluded that Russian passivity and lack of coherent strategy overwhelmed these bright spots.

The Confirmation Bias

Another hypothesis generated earlier pertains to the so called "confirmation bias", which holds that individuals will seek out data which tends to confirm their existing opinion, rather than subject those opinions to scrutiny through attempted falsification. Specifically for the Russo-Japanese War I argued that individuals would look for justification for their existing

home country doctrine. The support for this hypothesis was mixed. Observers did tend to support their doctrine in some respects, but many of the same observers also tended to criticize other aspects of the same doctrine.

Confirming the Status Quo

Some of the most deliberate attempts to use the Russo-Japanese War to confirm existing doctrine can be seen simply by reading the full titles of the publications. Colonel Kearsey's book was entitled *A Study of the Strategy and Tactics of the Russo-Japanese War 1904 Illustrating the Principles of War and the Field Service Regulations* (1935?)⁵⁸⁴ and Footslogger's book was *A Short Account of the Russo Japanese War for Examination Purposes* (1925). Major General Sir Ernest F. Orton, writing as Notrofe, put together a cavalry version of *Defence of Duffer's Drift*, walking the reader through a series of exercises design to reinforce existing British cavalry doctrine. When examining books like these it is difficult to disentangle whether these were viewed as attempts to primarily explain the events of the Russo-Japanese War, or if they were attempts to primarily illustrate field regulations that happened to use the Russo-Japanese War as their inspiration.

Almost no clearer statement of the confirmation bias can be found than Lieutenant-General Rudolf von Caemmerer's commentary on the Battle of Mukden study by the German General Staff (Historical Section). He wrote "It is my conviction that this great battle as well as the whole course of the East Asiatic war have most admirably confirmed the doctrines of

⁵⁸⁴ There is no publication data for Kearsey, however records at various libraries provide the speculative "1935?" date.

the German Service Regulations”⁵⁸⁵. Working from that premise he then begins to refute the rival tactical doctrine of massed breakthrough proposed by General Wilhelm von Scherff⁵⁸⁶. His commentary alternates between a principle in German regulations, an example of its illustration at Mukden, and a warning against variation from regulation, also often illustrated by example.

The French General Francois deNégrier, simultaneously confirmed and modified current French tactics.

As regards infantry, our 1904 regulations of December 3 practically satisfy the latest requirements. The lessons taught by the Russo-Japanese War have not only demonstrated that the offensive tactics and spirit of initiative recommended by them are based on firm and sound lines, but have confirmed the correctness of their principles. Once supplemented by detailed instructions as to night attacks... our infantry regulations will leave little to be desired⁵⁸⁷.

There were other defenses of doctrine and weapons development, many of which have already been discussed, including a spirited advocacy of the move towards all big gun fast battleships undertaken by Sims and Pakenham. Yet while this defense of existing regulations was certainly present, a number of counterexamples could be found, often within the work of the same authors. These counterexamples are damaging to the explanatory power of this formulation of the hypothesis.

⁵⁸⁵ Lieutenant-General Rudolf von Caemmerer, “Comments on the Battle of Mukden,” in Lieutenant Karl von Donat (editor and authorized translator) *The Battle of Mukden* supplement to the *Military History of the Russo-Japanese War* (Hugh Rees, 1906) pages 55-56.

⁵⁸⁶ Von Scherff proposed close order mass attacks as a method of breakthrough (as opposed to encirclement), and as such was opposed to both Schlichting and Schlieffen. A fuller discussion of the intricacies of these various approaches will be in chapter six. Antulio J. Echevarria II, *After Clausewitz: German Military Thinkers Before the Great War* (University Press of Kansas, 2000) pages 122-124.

⁵⁸⁷ General Francois Oscar de Négrier, *Lessons of the Russo-Japanese War* translated with permission by E. Louis Spiers (Hugh Rees, 1906) page 80

Criticizing Their Own Status Quo

Somewhat more problematically for this particular heuristic, there were also plenty of examples of individuals who used the experience of the Russo-Japanese War to refute and adjust the doctrine of their own militaries. This took place in both the army and naval observer missions.

Some of the most scathing and direct criticism is in Erskine Childers' already cited book, *War and the Arme Blanche*. While Childers was by then no longer serving in uniform, and thus may fall outside of the bounds of our hypothesis, the lengthy introduction by Field Marshall Lord Roberts adds important weight to the book, engages in substantive criticism of Sir John French's cavalry operations manual, and is clearly within the scope of the working hypothesis.

After having watched the Japanese use advanced cover and concealment to place batteries which would fire in coördination with infantry assault, Captain Riechmann, of the US Army, brought back criticism of the US artillery branch. He wrote that "it is utterly unthinkable that our artillery should be able to acquire the skillful control and direction of fire, and the uniformly high average of marksmanship of the Japanese artillery, so long as the present disorganization of our field artillery is not replaced with a solid organization"⁵⁸⁸.

⁵⁸⁸ Carl Reichmann report, pages 271, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 1) (US Government Printing Office, September 1906)

In addition to the military criticisms, the naval aspect of the Russo-Japanese War also generated substantial criticism of the doctrines of home countries. The debate between Captain Mahan and Lieutenant Commander Sims regarding battleship construction has already been detailed. In England Admiral Sir Reginald Custance used Tsushima and Ulsan to pen a series of articles in *Blackwood's Magazine* explicitly attacking the shipbuilding policies of Admiral Sir John Fisher. It is not necessary to repeat the details of the debate here⁵⁸⁹. Mahan found support for his own theories in the Russo-Japanese War, stating unequivocally that “everything depended on command of the sea; and command of the sea could be obtained only by the destruction of the enemy’s fleet. That destruction, again, could be effected only by battle; by the cannon; by brining the fleets into collision under the circumstances of greatest advantage for the party seeking the encounter,”⁵⁹⁰ and yet he believed that this lesson was insufficiently learned in the US Navy.

Summary: Confirmation Bias

No affirmative conclusion can be reached about the operation of the confirmation bias as formulated in reflecting confirmation of the existing doctrine of observer countries. There were certainly instances where people sought out confirmation of existing field regulation and doctrine within the events of the Russo-Japanese War. There were also instances where individuals cited the events in the war as evidence in support of changing their own doctrine, field regulation, or weapons development efforts.

⁵⁸⁹ Please see the discussion in my Chapter Three regarding the differing views of observers and commentators on battleship design.

What is perhaps more suggestive is that some of the more substantive criticism of doctrine and weapons design came from those who were critics of their respective military's internal policies prior to the Russo-Japanese War. Custance and Mahan's objections to Fisher's policies concerning the all-big-gun fast ship were coincident with, not chronologically following, the outbreak of the Russo-Japanese War, and predated Tsushima. Caemmerer's careful defense of aspects of Schlichting's tactical system, while attack on that of von Scherff, ran deeper than a discussion about tactics at Mukden. This is suggestive at this stage, but without a fuller understanding of the cultural environment in which these doctrinal debates were being fought we cannot go beyond speculation. In Chapter Six there will be a fuller discussion, bringing in a fully specified ideational model which could provide more leverage on the problem. However, at the general level, that is, at the level of predicting that commentators and observers will judge the events of a war based on the *existing doctrine* of their own military, this hypothesis fails.

Cognitive Closure and Discrepant Data

One of our hypotheses was that observers and commentators would discard data that were inconsistent with preconceived notions. This phenomenon of "explaining away" discrepancies allows the observer to simultaneously retain their existing core beliefs while

⁵⁹⁰ Captain Alfred Thayer Mahan, *Naval Strategy: Compared and Contrasted with the Principles and Practice of Military Operations on Land, Lectures Delivered at the U S Naval War College, Newport, R I, between the years 1887 and 1911* (Little Brown & Company, 1911) page 418

acknowledging the occurrence, though not implications or significance, of new events⁵⁹¹. This sort of behavior is observable in the professional literature of the Russo-Japanese War.

Some of the most intricate mental gymnastics were performed by advocates of shock tactics by cavalry. As already noted in the earlier discussion on the performance of cavalry in the Russo-Japanese War, there was a large discrepancy between the assessment of cavalymen and others dealing with the cavalry issue⁵⁹². But what was undeniable, to even the most doctrinaire cavalry supporters, was that the Russo-Japanese War had not afforded any positive examples of cavalry performing well in the shock role. This was a problem, though not an insurmountable one, for advocates of the *arme blanche*. In 1914 von Bernhardi published an update to his earlier treatise on cavalry tactics, this one taking into account the Russo-Japanese War and the literature that the war had spawned. He argued that the cavalry had not been indicted by events. On the contrary, he found supporting examples:

To indicate only one *example* from the history of the latest war, I would call to mind the undertaking of the Russians against the rear communications of the Japanese army. *If* this undertaking had been actually directed against the *only* railway at the disposal of the Japanese army, *if* it had been carried through by throwing into the scale the *whole fighting strength of a really mobile and efficient* cavalry, and *if* it had thereby succeeded in interrupting the supplies of the Japanese army for a period, the whole course of the campaign *might* have been changed [emphasis added]⁵⁹³

Bernhardi has fabricated what he calls an “example” by making some really heroic counterfactual assumptions, and even then can only contend that things “might have been

⁵⁹¹ Donald A Schön, *The Reflective Practitioner: How Professionals Think in Action* (Basic Books, 1983) page 44; Richard E Nisbett, and Lee Ross *Human Inference: Strategies and Shortcomings of Social Judgment* (Prentice-Hall, 1980).

⁵⁹² Please see the discussion on cavalry tactics in my Chapter Three.

⁵⁹³ General Friedrich von Bernhardi, *Cavalry* (translated by Major G T M Bridges, edited by A Hilliard) (George H Doran Company, 1914), page 101

changed”. Bernhardi arrived at the tautological position that “if the Russians would have succeeded, then I would have an example of how cavalry could succeed”. This is less then persuasive, but it does help resolve the problems posed to Cavalry supporters by the war.

By drawing on a frequentist approach, Field Marshall Sir John French argued that recent data critical of cavalry operations were overwhelmed by a long history of warfare in which the cavalry played an important, and often decisive, role. In his preface to the English translation of Bernhardi’s book, Sir John, who would shortly assume command of the BEF upon the outbreak of the First World War and was himself a cavalry officer, wrote that

It is always a danger when any single campaign is picked out, at the fancy of some pedagogue, and its lessons recommended as a panacea. It is by the study and meditation of the whole of the long history of war, and not by concentration upon single and special phases of it, that we obtain a safe guidance to the principles... General von Bernhardi does not neglect the lessons of past wars, but he gives us the best of reasons for thinking that the wars in South Africa and Manchuria have little in common with the conditions of warfare in Europe⁵⁹⁴

By reaching back into the historical record to the Napoleonic era, nearly eighty years prior to the data of his writing, Sir John was able to corroborate Bernhardi’s book, while simultaneously discarding the more recent experiences of the Russo-Japanese War and the Boer War, as well as the Franco-Prussian, US Civil, and Spanish American wars, all of which posed problems for advocates of the *arme blanche*. The relevant data for supporting French and Bernhardi’s conclusions were not the results of the most recent wars, but were the outcomes of the large Napoleonic wars of a century ago.

⁵⁹⁴ Field Marshall Sir John D. P. French, “Preface” in General Friedrich von Bernhardi, *Cavalry* (George H. Doran Company, 1914) pages 8-9

This raises the issue of defining what the correct pool of experience should be for Bayesian analysis. Unlike the experiment of estimating the probabilities of colored marbles in a barrel by drawing a sample, it could be argued that the conditions contributing to battlefield success change, often frequently, and perhaps constantly. For Sir John, the relevant pool of experience began in the late 1700s, and continued to 1914, while some of the largest wars during that period, including the Russo-Japanese War, were exceptional events.

Not only does Sir John demonstrate closure and a predilection to cherry-picking evidence in the face of discrepant data, but he also very clearly illustrates a cognitive anchor in operation. The success of cavalry in the Napoleonic battlefield continued to shape the thinking of Bernhardt, Sir John, and others, who quite explicitly built that deep historical link while discarding all that intervened as special cases, characterized by the idiosyncrasies of the belligerents, such as lack of a regular Boer army, or unique geography, such as the Manchurian Kaoliang.

Asiaticus, an unabashed advocate of the *arme blanche*, also twists his way through a discussion of cavalry action. Discussing the Japanese cavalry, Asiaticus notes that they “did not avoid shock tactics, and, only yielding to the rifle fire of the Cossacks, ordered their squadron in reserve to dismount”⁵⁹⁵. He thus acknowledges that fire forces dismounting, but still maintains that shock tactics are superior. Yet once dismounted, Russian cavalry became inferior even to infantry. Noted Asiaticus, “dismounted Cossacks are no match even for

⁵⁹⁵ “Asiaticus” [sic] *Reconnaissance in the Russo-Japanese War* (translated from German by J Montgomery, 3rd Hussars) (Hugh Rees, 1908) page 37

rather weak detachments of Japanese infantry”. Asiaticus thus established the following relationships:

- Weak Japanese infantry beats dismounted Cossacks
- Dismounted Cossacks beat Japanese cavalry employing shock action

Simple Aristotelian application of the transitive principle would conclude:

- Therefore weak Japanese infantry is superior to Japanese cavalry employing shock action.

Yet that is not Asiaticus’ conclusion. Instead he argues that in instances where the cavalry demonstrated the “proper” spirit and tactics (i.e., remaining mounted), they had poor equipment or had to contend with bad geography. Asiaticus notes that “their insufficient peace training, and the small support given them, are the only reasons why they were not able to carry out their task to the full, and why they did not always ride up to the enemy”⁵⁹⁶. This allows him to conclude with the argument that cavalry should be paired with infantry and machine guns, but these units should be subordinated to the cavalry commander. He goes on to conclude that “the whole force and strength of cavalry rest as before on the horse as its principle weapon, beside which the *arme blanche* and the rifle are only a means to an end”⁵⁹⁷ and he concludes that

The value of the cavalry was *not in any way* suffered by the experiences of the last war, but their training and employment seems to be a matter of increasing difficulty. In the proper use of the rifle the very best results should be aimed at, without allowing cavalry to *sink to the level* of mounted infantry [emphasis added]⁵⁹⁸.

⁵⁹⁶ “Asiaticus” (*op cit*) page 71

⁵⁹⁷ “Asiaticus” (*op cit*) pages 147

⁵⁹⁸ “Asiaticus” (*op cit*) pages 146

General Orton, writing as Notrofe, recognized the lethality of the emerging modern battlefield to mounted targets. Rather than seeing this as a disadvantage, he argued that it made cavalry shock action more surprising, and therefore more effective, when it happened.

The prize offered to cavalry which may dare to take a risk is usually out of proportion greater than the prize offered to the other arms. Deliberately to train cavalry never to take the risk of mounted and rapid action is a handicap which may be compared to a game of bridge with the penalty [*sic*] of not being allowed to go no trumps... The cult of the arme blanche, the cult of mobility, and, above all, the cult of daring to take responsibility and risk in acting mounted, require careful nurture in peace training in order that these factors may have any chance at all of being put into operation during war”⁵⁹⁹

A more obvious, but less consistently displayed, manifestation of this heuristic is mirror imaging, in which the belligerent generals are called out for criticism because of their failure to conform with the tactical doctrine of the observer. Because the subject does not behave in the way that the observer claims that they themselves would have behaved, the consequences of the action are not considered. Von Caemmerer criticizes Kuropatkin who “*ought* to have been aware that... the decisive action would most probably be fought on the right wing (vide German ‘Infantry Training’ II, 85) [emphasis original]”⁶⁰⁰. This sort of mirror imaging took place throughout the German narrative, where both the Russians and the Japanese are cited for failure to conform to German practice in combat.

The German approach emphasized encirclement, not breakthrough, that thus the Germans were able to dispense with the large casualties inflicted upon the Japanese at Port Arthur as

⁵⁹⁹ General Ernest Frederic Orton, (under the pseudonym “Notrofe”) *Cavalry Taught by Experience: A Forecast of Cavalry under Modern War Conditions* (Hugh Rees, 1910). Copy annotated by Major the Honourable Hugh Dawnay, DSO., pages 63-64.

⁶⁰⁰ Lieutenant-General Rudolf von Caemmerer, “Comments on the Battle of Mukden,” in Lieutenant Karl von Donat (editor and authorized translator) *The Battle of Mukden* supplement to the *Military History of the Russo-Japanese War* (Hugh Rees, 1906) pages 63. Caemmerer’s critique of Kuropatkin’s violation of sections of German infantry regulations goes on for three pages.

being an irregular quirk (while the *Official Account* ran eight volumes with supplements and maps, the Germans did not produce a separate volume for Port Arthur), and dismissed the Japanese losses at frontal attacks within Liao-yang and Mukden as a consequence of poor operations. This kind of narrative device is also common throughout the English, German, and American discussion of cavalry, where the failure of Russians and Japanese to adopt proper shock tactics was felt to be the cause for their failure to generate meaningful results on the battlefield. The notion that shock tactics were impossible was not considered.

There were demonstrated examples of observers and commentators using *ad hoc* reasons to justify discarding data that would otherwise seem to bear on the tactical problems under examination. But to make sense of such data we need to better specify discrepancy with respect to *what*, exactly. Why was a fortress assault discrepant for the Germans, but not for the British or Americans? Why were the cavalry actions in Manchuria discrepant for cavalymen but not for other observers and commentators? Ultimately we will need to explain how these initial biases are derived, as they are obviously not universally present in all observers and commentators to the war. Also, the biases against discrepant data did not appear to be randomly distributed among observers, suggesting that there were certain factors that caused a *group level* reaction to data discrepancy. In the case of cavalry, that group was coincident with a shared organizational interest. In all of the others it was *not* coincident with an organizational interest, as the divisions split organizations. As chapter four showed, it was possible to show that a group based on common interest might explain the reactions of cavalry, but it would not explain the reactions of other apparent groups that seemed to exhibit similar patterns of rejecting data as non-applicable, nor would it explain much of the other learning patterns that we have identified.

The Availability Heuristic

The availability heuristic maintains that individuals do not weigh each datum equally⁶⁰¹, but instead overlay a different weighing function that provides disproportionate emphasis to those data which are easy to recall due to temporal proximity, perceived saliency, or are otherwise more “available” to the learners themselves. The availability heuristic can function in two distinct steps. First, individuals might use vividly available samples of data to draw generalizations about the Russo-Japanese War itself. Second, individuals might use vividly available pieces of data to draw conclusions from the Russo-Japanese War to the likely shape of future wars more generally. I.e., individuals influenced by the availability heuristic may produce errors in their narration of events, or in their drawing of conclusions. This section examines a number of different phenomenon which could be considered applications of the availability heuristic.

Eye Witness, Salience, and Hearsay

The subject of cavalry performance provoked some of the most flagrant applications of the availability heuristics. Lieutenant Colonel McClelland, of the US 1st Cavalry Division posted with the Japanese, was trying to find evidence of decisive cavalry action, and was disappointed that he was unable to personally witness any meaningful cavalry activity. For

⁶⁰¹ Rationalist models allow for individuals to modify the weighting of data according to the reliability of observers. For example, the eye witness descriptions of a criminal suspect from a judge and from a convicted felon with glaucoma and Mr. Magoo (Rutgers- no date) glasses might be assigned different weights.

though he was attached to the Guards Cavalry, that unit saw little action. Rather than discussing the circumstances which led to that state, he recounts that

a competent authority states that at the battle of the Sha River⁶⁰², Prince Kanin, with a brigade of the 'independent cavalry' aided by four machine guns, attacked the left flank of the Russians and turned the day there in favor of his countrymen. It may be that if an opportunity had presented itself for me to accompany and study the work of the independent cavalry brigades I might make more exceptions, but the instance narrated is the only one of which I heard⁶⁰³.

Colonel W. H. H. Waters, of the British Army and posted with the Russians, noted in his report how stories of shock action seemed to actually outnumber instances of shock action.

During the series of battles on the Sha Ho it was announced one day that a squadron of Primorsk Dragoons had exterminated a Japanese company of infantry. Possibly it may have performed this feat, but to hear the amount of laudations which it caused one might have thought a great victory had been gained, whereas Kuropatkin was at the time, if not vanquished, certainly not the victor. I used to hear continually inordinate praise lavished on this or that petty cavalry skirmish, while, as regards a big defeat, it was said everything would be all right next time, and there was, therefore, no need to bother about by-gones⁶⁰⁴

Both Waters and McClernand discuss a third party relaying a story of cavalry action at the Sha-ho. Yet in Waters' version it is the Primorsk Dragoons, a Russian unit, that triumphs, and in McClernand's story it is Prince Kanin's Japanese independent cavalry brigade that gets the glory⁶⁰⁵. Waters is far more skeptical and critical of the rumor. In further detailed analyses of the Sha-ho it is impossible to find a record of the shock actions of either the

⁶⁰² Sha Ho

⁶⁰³ Edward J. McClernand report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 3) (US Government Printing Office, 1907) pages 113. The third party labeled as "a competent authority" is never identified.

⁶⁰⁴ Colonel H. H. Waters "General Report on the Experiences of the Russo-Japanese War" March 1905, Great Britain Committee of the Imperial Defence (Historical Section) *The Russo-Japanese War: Reports from British Officers Attached to the Japanese and Russian Forces in the Field* (volume three, His Majesty's Stationary Office, 1908) page 132.

⁶⁰⁵ McClernand was accompanying the Japanese, while Waters was with the Russians. This may account for the identities of the victor in the various version of the rumor.

Primorsk Dragoons or Kanin's body of cavalry. The inclusion of hearsay was not just limited to the inclusion of statements from soldiers.

The strongest observations in favor of Cavalry shock action from the British came as hearsay, that is, related via a third (unreliable) *civilian* party. Lieutenant-General Ian Hamilton wrote, in his discussion of Cavalry tactics, that

I have also seen an account copied from a French paper of a thrilling and apparently most successful charge which they [the Cossacks] delivered. I am told on excellent authority, however, that no charge whatsoever has yet taken place within the theatre of operations of any Japanese Armies, and the chief characteristic of the lance as reported up to date by the 2nd Army, is the very great distance at which it can usually be seen⁶⁰⁶.

Given the date of Ian Hamilton's report this fictional charge was not the event at the Shaho, and was most probably at Wa-fan-gou.

Asiaticus details an action at Jud-sia-tun on 30 May as a prelude to Wa-Fang-Gou that may be the event to which the French newspaper was referring. Asiaticus, who is strenuous in his defense of the *arme blanche*, is even forced to concede that the action was not a particularly glorious event. The larger German and British official histories scarcely mention the skirmish, but it plays a large role in Asiaticus' narrative.

The commander of the [Japanese] 14th Cavalry Regiment... attacked with the rest of his regiment, two squadrons in the front line now approaching Cossacks in *echelon* to the left. But no decisive result was obtained, for at this moment a column of mounted rifles and 1 *sotnia*⁶⁰⁷ appeared on the flank of the Japanese... fired on them,

⁶⁰⁶ Ian-Hamilton, cover letter to Jardine "Report on the Trans-Baikal Cossacks" 11 August 1904,. Great Britain General Staff: War Office *The Russo-Japanese War: Reports from British Officers Attached to the Japanese and Russian Forces in the Field* **Marked Confidential** (volume one, no publisher, 1905) page 307.

⁶⁰⁷ A *sotnia* is a Cossack cavalry squadron. The term is commonly used by multiple commentators on the war.

and compelled them to retreat. The Japanese showed here that they did not shy at *l'arme blanche*, and even took the initiative⁶⁰⁸

Yet this account shows that that the Japanese charge against the Russian cavalry was indecisive, was checked by rifle fire from mobile infantry that had dismounted around the Japanese flank, and ultimately had to retreat without achieving its objective.

Not all incidents of the operation of the availability heuristic were related to cavalry. US Infantry Captain John Morrison's discussions of the merits of artillery were drawn almost entirely from his own direct observations, which took place over a very limited time frame. He witnessed three infantry attacks where the Russians used artillery on the defensive, and these let him to discount the importance of modern artillery in battle.

I saw deployed lines under artillery fire three times when I was close enough to distinctly witness its effect. In neither [sic] case were the casualties significant... The result of firing into an advancing line of infantry in attack on was but very little better as I saw it. As to its preparing the way for an infantry attack on intrenched [sic] positions held by good troops, I believe its effect will be small... The moral effect on good troops is, I believe, overestimated. From what I saw and was told by Japanese officers of the effect of the Russian artillery, I do not believe that the improvements in field artillery will have much, if any, effect on changing present infantry tactics⁶⁰⁹

Morrison was handicapped by being an observer on the Japanese side early in the war. Other accounts of Russian artillery fire that include Morrison's time of observation indicate that artillery fire steadily improved during the war, as deficiencies in targeting were redressed

⁶⁰⁸ "Asiaticus" [sic] *Reconnaissance in the Russo-Japanese War* (translated from German by J Montgomery, 3rd Hussars) (Hugh Rees, 1908) page 102.

⁶⁰⁹ John Morrison report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 1) (US Government Printing Office, September 1906) pages 83-84.

when gunners adjusted to their newly issued guns and as the Russians began to adopt indirect fire methods, complicating Japanese counter-battery fire.

The German discussion of mountain warfare is also engages in an *ad hoc* narrative of events, because it is not clear how they actually reached conclusions. In their discussion of the Japanese ability to flank the Russian Corps holding the mountains to the east of Liao-yang, the Germans argue that “the successful advance of the Japanese... proves that it is just the offence which, in the mountains, has the advantage; for the defense is obliged to scatter its forces too much in the mountains”⁶¹⁰. However, later in the paragraph they do concede that the Russian troops “were unprovided [*sic*] with the necessary equipment for mountain warfare- that they had, moreover, no Artillery or trains suitable for this kind of warfare”⁶¹¹. Thus, while the German *Official Account* wants to chalk up Russian failure on the defense to an inherent offensive advantage granted by geography, one is left to wonder how, given the German *Official Account*’s position on the previously acknowledged importance of artillery and high rates of ammunition consumption⁶¹², the lack of Russian artillery, training, supplies, and equipment were balanced against the hypothesized systemic effects of geography and offensive advantage.

⁶¹⁰ German General Staff (Historical Section), *Wa-Fan-Gou and Actions Preliminary to Liao Yan* [*sic*] Lieutenant Karl von Donat (editor and authorized translator) (Hugh Rees, 1913) page 248

⁶¹¹ German General Staff (Historical Section), *Wa-Fan-Gou and Actions Preliminary to Liao Yan* [*sic*] Lieutenant Karl von Donat (editor and authorized translator) (Hugh Rees, 1913) page 248. The trains referred to were supply wagons and caissons for the artillery, not locomotives.

⁶¹² One of the chief lessons brought out in the German, American, and British reports was the need for a modern mountain (or pack) artillery piece.

Captain Judson, an observer from the US Army Corps of Engineers, offered up a criticism of other observers based on the availability heuristic. He argued that

correspondents and attachés, being for the most part in the rear of the infantry firing line, behold the effects of artillery fire often, but of infantry fire rarely. For this reason less is written of the latter than of the former. Moreover, as the Russian army was for the most part being forced back, men wounded by artillery fire were more apt to reach the surgeons than were those falling in the infantry firing line⁶¹³.

While intuitively plausible, many of the observers comments on the “murderous” fire of machine guns on both the offense and the defense seem to belie this theory⁶¹⁴.

The Availability Heuristic and the Last War

Jervis postulated that the “last war heuristic” could provide some insight into problems of military learning. In many ways this heuristic serves as one link between the availability heuristic and analogical reasoning. Certain analogies are privileged over other potential analogies because they are more available within the mind of the learner. The last war may indeed inform learning, but that effect is caused by the suggestion of analogies from these last wars that guide the way that current events are interpreted. Of course, as Jervis acknowledges, the “last war” will be different for the militaries of each country, and even if the war is the same, the lessons drawn from the war may be different for different

⁶¹³ William V. Judson report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 3) (US Government Printing Office, 1907) page 213.

⁶¹⁴ Joseph Kuhn report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 2) (US Government Printing Office, 1906) pages 196-197.

participants⁶¹⁵. This section explores some occurrences of the application of the last war heuristic.

The influence of the recent Boer experience was notable in many British pieces on land warfare. Erskine Childers, a veteran of the Boer War, discusses cavalry tactics by noting

small fire actions, in which the Cossacks showed incompetence. Contrast De Wet's skill in raiding similar posts... The history of Dronfeld and Poplar Grove [was] repeating itself in Manchuria... Contrast the Boer night attacks, so rarely, even when unsuccessful, suffering serious loss, so often highly successful⁶¹⁶.

In their reports, many of the British officers that had served in South Africa referred back to this experience, and indeed debated the lessons of this experience with each other. Lieutenant General Sir William Nicholson was responsible for organizing the reports from all British Army officers for consumption by the War Office, and he provided commentary and critique to the reports filed by the observers, and Lieutenant General Sir Ian Hamilton gathered the reports made by the captains and colonels observing the Japanese, and included his own observations before forwarding them off to Nicholson. It was in this role that the influence of the Boer experience could be seen. Ian Hamilton and Nicholson had a sharp exchange over the hypothesized actions of Boer general Louis Botha in the crossing of the Yalu, wondered how Botha would have handled the defense of the crossing, and judged the Russians against their assessment of Botha's hypothetical actions⁶¹⁷.

⁶¹⁵ Dan Reiter, *Crucible of Beliefs* (op cit, 1996) argues that different countries drew distinct (and sometimes contradictory) lessons on the efficacy of balancing, bandwagoning, and maintaining neutrality during general war.

⁶¹⁶ Erskine Childers, *War and the Arme Blanche* (Edward Arnold, 1910) page 338

⁶¹⁷ Botha led the Boers at the battles of Spion Kop and Colenso, both of which were lopsided victories against the British. He would later become Prime Minister of the Union of South Africa. See Lieutenant General Sir Ian Hamilton, "Battle of the Yalu," 13 May 1904 and Lieutenant General Sir William Nicholson cover letter for Hamilton's report, 24 May 1904, in Great Britain General

A small battle, known as “the battle of 31 July” fought after Wa-fang-gou as part of the prelude to Liao-yang, was discussed by Lieutenant Colonel Hume. Ian Hamilton, in his cover letter commented that

I was very much struck with the scene of the determined and indecisive struggle at short range... the terrain and all the circumstances reminded me so vividly of a similar tight corner at Waggon [sic] Hill on the 6th January 1900. The little hollow was identical in fact with the hollow at the bottom of which the two howitzers, Castor and Pollux, were placed in the Ladysmith line of defence... Had it been absolutely necessary to the Japanese to make such a charge, as it was with us at Waggon Hill, I am confident they would have found the men to do it⁶¹⁸.

While perhaps not well known to the modern audience, Waggon Hill was a battle in the Boer War. In a contemporary history by Sir Arthur Conan Doyle it was described thusly:

It was on the Waggon Hill side, however, that the Boer exertions were most continuous and strenuous and our own resistance most desperate. There fought the gallant de Villiers, while Ian Hamilton rallied the defenders and led them in repeated rushes against the enemy's line. Continually reinforced from below, the Boers fought with extraordinary resolution. Never will any one who witnessed that Homeric contest question the valour of our foes. It was a murderous business on both sides. Edwardes of the Light Horse was struck down. In a gun-emplacement a strange encounter took place at point-blank range between a group of Boers and Britons. De Villiers of the Free State shot Miller-Wallnut dead, Ian Hamilton fired at de Villiers with his revolver and missed him. Young Albrecht of the Light Horse shot de Villiers. A Boer named de Jaeger shot Albrecht. Digby-Jones of the Sapper shot de Jaeger. Only a few minutes later the gallant lad, who had already won fame enough for a veteran, was himself mortally wounded, and Dennis, his comrade in arms and in glory, fell by his side. There has been no better fighting in our time than that upon Waggon Hill...⁶¹⁹

Staff: War Office *The Russo-Japanese War: Reports from British Officers Attached to the Japanese and Russian Forces in the Field* Marked **Confidential** (three volumes, no publisher, 1905) pages 33-38. In this particular case Hamilton's report was a stand alone item, and not a cover letter on another observer's report.

⁶¹⁸ Ian Hamilton report, 28 September 1904, in Great Britain General Staff: War Office *The Russo-Japanese War: Reports from British Officers Attached to the Japanese and Russian Forces in the Field* Marked **Confidential** (three volumes, no publisher, 1905) page 251.

⁶¹⁹ Sir Arthur Conan Doyle, *The Great Boer War* (McClure Phillips & Co, 1902; republished by Kessinger Publishing LLC, 2004) page 144

This particular engagement, important not only to British military history generally, but to Ian Hamilton specifically, conditioned the way that he himself made observations and framed the observations of others for the wider military audience. Yet as a guide to Ian Hamilton's belief Waggon Hill was imperfect. While Ian Hamilton stressed the importance of open order skirmish lines and suppressive fire, he did not advocate "repeated rushes against the enemy's line". Indeed, even when confronted with successful rushes Ian Hamilton was dubious. At the minor battle of Feng-huang-cheng (19 May 1904) he witnessed a successful sprint against a prepared Russian position, and later argued with the Japanese commander about the advisability of such tactics. He noted that "I believe, nevertheless, that such a system of attack must fail against such marksmen as the British infantry have now become. If the Russians shoot as badly as they are said to do, then, of course, all is possible"⁶²⁰

Ian Hamilton was not the only officer who disclaimed elements of the most recent war. In his high level summaries and framing documents Nicholson took great care to try and specifically move the narrative away from confirming "lessons" of the Boer War. He wrote in a cover letter for Ian-Hamilton's report on Japanese infantry tactics that "valuable as were the lessons of the South African War, I am included to keep an open mind on this subject, for tactics which may be appropriate under certain conditions, and against such opponents

⁶²⁰ Hamilton, Lieutenant-General Sir Ian *A Staff Officer's Scrap Book During the Russo-Japanese War* volume 1 (Edward Arnold, 1905) page 144

as the Boers, might prove quite out of place under different conditions and against regular troops”⁶²¹.

The German Official history referred of course to the Franco-Prussian war, but it also drew its historical examples from Napoleon and Hannibal. The American observers said very little about the Spanish-American wars, or even the American Civil War, and instead referenced the Franco-Prussian, Boer, and Napoleonic wars. As will be discussed in a separate section in this chapter⁶²², the experiences of the First World War did not play a significant role in the narration or analysis of events in the professional literature on the Russo-Japanese War following 1918.

For naval warfare there were even fewer historical anecdotes. The British did refer to Lord Nelson at Trafalgar, the British blockade of the United States during the Revolutionary and 1812 wars, and other, lesser, engagements of the Napoleonic Wars. More recent naval battles, such as Lissa (1866) between the Austrians and Italians, and Santiago Harbor and Manila Bay (both 1898) between the United States and Spain did not figure in the narratives, including those of the Americans.

The analysis of the observers and commentators on the Russo-Japanese War does indeed reference the previous war experiences of the writers’ home militaries. However it also taps

⁶²¹ Nicholson cover letter to Ian Hamilton “Training in Attack of a Japanese Infantry Company,” 1 June 1904, page 299. Great Britain General Staff: War Office *The Russo-Japanese War: Reports from British Officers Attached to the Japanese and Russian Forces in the Field* **Marked Confidential** (Volume one, no publisher, 1905).

⁶²² Please see section on “backwards anchoring” and the influence of the First World War on post 1918 analysis of the Russo-Japanese War.

into a richer set of historical experience. Observers compared Togo to Nelson and his sailing ships in 1805, rather than Dewey with his ironclads nearly 100 years later, while Dewey was certainly the more proximate, and arguably the more apt, comparison. Even in instances when there was a clear link with the chronologically last war, such as to the British in the Boer War, there were disconfirming cases of the power of these lessons. Ian-Hamilton, who had distinguished himself in the defense of Waggon Hill, and who saw superficial similarities between specific incidents in the Russo-Japanese War and Waggon Hill, specifically did *not* advise the adoption of identical tactics. Against improved fires he felt that open rushes were highly dangerous and risky. Nicholson went further, and didn't even sign off on the full similarity between the wars, repeatedly cautioning his readers within the British high command to take Ian Hamilton's allusions to the Boer War critically, and to not impose conclusions drawn from the Boer War on the situation in Manchuria. All of this suggests that the "last war heuristic" does not explain patterns and variations in learning about the strategy, operations, tactics, and naval operations of the Russo-Japanese War.

Vivid Experiences

For first hand observers war is certainly able to provide a series of vivid events. Using a specific application of the availability heuristic we hypothesized that vivid events would have a disproportionate effect on observers. In this section I will explore this hypothesis. Unfortunately it does not lend itself to the standard aggregation table and discussion format that we have been using on most topics throughout the chapters. Every first hand document contained some vivid, often gruesome, stories, as would be expected when observing warfare. As Captain Reichmann wrote upon viewing the field at Port Arthur, "to

fully appreciate the necessity of trenches one must have seen the terrible bombardment to which the position was subjected⁶²³. Yet drawing a causal link is complicated. For this section I will arrange some crucial tests on specific narratives.

Certainly there are some potentially confirmatory pieces of data. Captain Carl Reichmann, of the US Army's 17th Infantry Division was greatly impressed by the suppressive effects of artillery, having come under fire himself during Wa-fang-gou. The Japanese

opened a heavy fire against the Russian batteries, which became silent in less than 15 minutes. We were subsequently told that 13 of the 16 guns on the hill were lost, and that all the artillerymen were killed, wounded, or contused. No living thing was visible on the hill... [The Russian party retreated and] drew the enemy's fire, whose shrapnel began to search not only the front and reverse slopes of the hills, but the bottoms behind as well. Here our guide was wounded... When we turned to take our wounded guide to the railroad station the Russian artillery was silenced and the enemy was making progress; that we could see. He shelled the Russian right and maintained a severe artillery fire against the Russian front between the railroad and the Ssupingchih-Chaochiantun road... All the time the enemy's fire came closer and increased in intensity⁶²⁴.

Carl Reichmann's report on the Russian defense of Liao-yang is also expressive in its descriptions.

The enemy now also used high-explosive shells; great clouds of dirt and stone flew into the air. He advanced his infantry, compelling the Russians to show themselves and open fire, and at the same time he blew their trenches about their ears and covered them with a whirlwind of shrapnel. At 6:40 pm the fury of the action had risen to a height of which neither pen no brush will ever be able to render an adequate description. It is small wonder that some Russian officers went insane

⁶²³ Carl Reichmann report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (Volume 1) (US Government Printing Office, September 1906) page 265.

⁶²⁴ Carl Reichmann report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (Volume 1) (US Government Printing Office, September 1906) pages 198-199.

during the action. Yet the Russian infantry declined to yield up its position under the pressure of the Japanese artillery⁶²⁵.

Reichmann duly reported the effectiveness of indirect suppressive fire, the necessity of combined arms and slow assaults, and a surprisingly high rate of ammunition consumption. Yet so did many other observers who did not come directly under fire, making it difficult to posit a causal relationship between Reichmann's first hand experience and conclusion.

Following the siege of Port Arthur, Colonel Wood, as military attaché (though not an observer) was allowed to tour the freshly surrendered fortifications. He comments that while touring the fortifications to the north⁶²⁶, he had to step over the mutilated bodies and limbs of dead Japanese and Russian soldiers and "in trying to avoid stepping on them my foot struck against something which yielded slightly –an uncanny sort of feeling –it was the body of a Russian soldier"⁶²⁷. Two pages later he wraps up his book by noting that

the whole management of the investment by the Japanese is full of profitable lessons. Our text-books on strategy and the art of war will have to be rewritten, if we are to gain anything from the Russo-Japanese War... The siege of Port Arthur will go down to history as the greatest the world has ever seen. Much has been said and written by impatient critics about the slow progress of the siege, but it had all been previously arranged. Such forts and positions, aided as they were by great natural advantages could not be taken in a week nor a month. Every step taken by the Japanese was a bloody one, costing many lives (shall we ever know how many?),

⁶²⁵ Carl Reichmann report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (Volume 1) (US Government Printing Office, September 1906) page 224.

⁶²⁶ It will be recalled that the main Japanese effort was, for a long time, directed along a North-South axis. It was only late in the siege that they changed their approach to come from the West against 203 Meter Hill. Consequently the Northern fortifications didn't begin to fall until the Japanese took 203 Meter Hill and began to deploy artillery firing east.

⁶²⁷ Lieutenant Colonel Oliver Ellsworth Wood, *From the Yalu to Port Arthur: An Epitome of the First Period of the Russo Japanese War* (Franklin Hudson 1905) page 229. Prior to this story Wood describes other, equally gruesome encounters while watching the final days of the siege and walking the battlefield.

but the pre-arranged plans were carried out regardless of the losses. They knew what they had to do –and did it⁶²⁸

This bleak conclusion of the inevitability of losses during multi-month sieges and plea to revisit US war expectations was out of character for the rest of the book. During the first three quarters of the book he offers a narrative and critique, but once confronted with Port Arthur, and having walked the grounds in January following the Russian capitulation he concludes with his recommendations, which include changing the assault tactics of his military, or rewriting the “text books on strategy and the art of war”.

Ian Hamilton’s discussion of cavalry ineffectiveness took on a vividly comical turn when he recounted a conversation with a Japanese cavalry officer.

A Japanese Cavalry Officer... was speaking to me a few days ago, and abusing vehemently what he called the 'skulking tactics' of the Cossack, whereby they denied to the Japanese cavalry the gratification of slicing off a few of their heads. I remarked 'perhaps when we debouch into the plains of Liao-yang you will meet a lancer regiment and then you should be able to get as much chopping and skull splitting as you like.' 'oh, no!' he cried, 'if we saw a lancer regiment coming for us I fear we would have to get off and shoot them.' He spoke a little shame facedly, as if he felt he had not given utterance to a very sporting idea. I, too, felt glad to think that it was only an infantryman who had heard him, and the conversation quickly changed⁶²⁹

From that anecdote and his observations at Liao-yang come Ian-Hamilton’s conclusion that

the results of the battle of Liao-yang should strengthen the hands of those who contend that cavalry intent on shock tactics is now an anachronism in civilized war. The remote chance that a charge might cause a panic amongst the dismounted men,

⁶²⁸ Lieutenant Colonel Oliver Ellsworth Wood, *From the Yalu to Port Arthur: An Epitome of the First Period of the Russo Japanese War* (Franklin Hudson 1905) page 231

⁶²⁹ Ian-Hamilton, cover letter to Jardine “Report on the Trans-Baikal Cossacks” 11 August 1904, page 308. Great Britain General Staff: War Office *The Russo-Japanese War: Reports from British Officers Attached to the Japanese and Russian Forces in the Field* **Marked Confidential** (volume one, no publisher, 1905).

or gunners, or infantry, who were subjected to it is hardly worth considering. Yet this is the only condition under which such an attack could hope to get home against quick-firing guns and magazine rifles. For my part I maintain that it would be as reasonable to introduce the elephants of Porus⁶³⁰ on to a modern battlefield as regiments of lancers and dragoons who are too much imbued with the true cavalry spirit to use fire-arms, and too sensible, when it comes to a pinch, to employ their boasted *arme blanche* –willing to wound and yet afraid to strike. The role they are condemned to play in 20th century battles is one deserving of the most profound commiseration⁶³¹

Not only are the events that Ian Hamilton relays vivid, but they are also vividly relayed in his reports. Yet again, finding some potentially confirmatory evidence does not prove a case. It is necessary to try and falsify our hypothesis.

On July 4, 1904, the Russians attacked a Japanese force at Mo-tien-ling. They were driven off by Japanese swordsmen. This attack prompted independent reports from Jardine, Ian-Hamilton, and Vincent, commentary from Ian-Hamilton appended to Vincent's report, as well as a brief comment from Nicholson. This action resulted in 11 Japanese casualties. However, per Ian Hamilton,

we met Lieut. Yoshi, who cut down, so it is said, eight Russians with his two-handed sword. I was introduced to him, and he showed me the famous weapon and told me something of his adventures. On the pass itself we met Colonel Baba, commanding the 30th Regiment, an officer of the 2nd Division General Staff, and several junior officers of the 30th Regiment, all of whom accompanied us past the temples to the narrow ridge where most of the fighting took place. There was no mistaking the spot, for the bloodstains were still on the ground⁶³².

⁶³⁰ These were elephants used against Alexander of Macedonia. While Alexander defeated Porus, the Macedonians mutinied over the prospect of facing more such opponents, and forced Alexander to cut short his Indian campaign. See John M. Kistler, *War Elephants* (Praeger Publishers, 2005) pages 40-41.

⁶³¹ Ian-Hamilton, cover letter to Jardine "Report on the Trans-Baikal Cossacks" 11 August 1904, page 314. Great Britain General Staff: War Office *The Russo-Japanese War: Reports from British Officers Attached to the Japanese and Russian Forces in the Field* **Marked Confidential** (volume one, no publisher, 1905).

⁶³² Ian-Hamilton, cover letter to Vincent report "Russian Attack on the Mo-tien-lung on 4th July 1904," 17 July 1904, page 203. Great Britain General Staff: War Office *The Russo-Japanese War: Reports*

While the narrative of Mo-tien-ling was certainly out of proportion to its strategic importance, it did not seem to unduly effect the tactical recommendations of the observers. Jardine, Vincent, and Ian-Hamilton continued to report on the necessity of covering fire, coordinated infantry-artillery assault, and ammunition consumption. Indeed, while other commentators discussed the “terror of cold steel” even for infantry⁶³³, these three did not find the need to include it among their recommendations.

There is a disconfirming event in naval operations as well. At short range aboard the Japanese battleship *Asahi* during Tsushima, British naval observer Pakenham had the vivid experience of having a medium caliber shell explode near his position, killing Japanese sailors, including a friend of Pakenham’s, and spraying Pakenham with gore and a jaw bone⁶³⁴. His colleague, Captain Jackson aboard the *Adzuma*, had a similar experience when a light gun casement under the bridge was blown up scattering “bits of raw flesh” around the conning tower, where they were “adhering to the outer wall” and obscuring Jackson’s view of the compass, from which he was trying to maintain accurate navigation data for his

from British Officers Attached to the Japanese and Russian Forces in the Field **Marked Confidential** (volume one, no publisher, 1905). The discussion of the affair runs 17 pages in the confidential reports.

⁶³³ Peyton March report number 3, (October 1904) page 43, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 1) (US Government Printing Office, September 1906)

⁶³⁴ Pakenham report, “The Battle of the Sea of Japan”, undated, Great Britain Admiralty Intelligence Office *The Russo-Japanese War 1904-1905: Reports from Naval Attachés* (republished by Battery Press, no date), page 368. The passage is exceedingly graphic. The Japanese, in their account of the battle, report that Pakenham promptly went below and put on a fresh white uniform, returning to his station and continuing his observations. Connaughton (op cit) pages 266-267.

narrative⁶³⁵. The effect must have been tremendous to provoke graphic description, as most of Jackson's reports are a dry narration of course changes, times, and ranges. Unlike Pakenham, who devoted substantial space to writing explanations, musings, and conjectures to accompany his observations, Jackson was normally a recorder. He broke narrative style in his final report to relay this incident.

This pair of vivid experiences did not, however, seem to influence the reports prepared by these officers present at Tsushima. On the contrary, on the critical issue of volume of fire, which held that crews would be demoralized by being subject to a heavy barrage and seeing the destruction of unarmored parts of the ship and the deaths of exposed sailors, both Pakenham and Jackson disagreed with Mahan⁶³⁶. Their accounts emphasized the destructive efforts of large caliber guns to sink ships, and not the disruptive efforts of medium caliber guns to cause havoc and break the morale of crews. They had been subject to the very sort of morale breaking fire that Mahan argued justified the 6"-8" medium caliber battery. Not only did they not witness morale breaking, they did not themselves become fixated on these graphic events.

These two critical areas –the effects of medium caliber gunfire on the morale of naval crews and the role of cold steel in infantry engagements, give us pause when investigating the vividness heuristic. In battle most everything seen by the observers was vivid. Attributing some causality to vividness is tempting, but does not appear to be justified. Often times

⁶³⁵ Jackson report 28 June 1905, Great Britain Admiralty Intelligence Office *The Russo-Japanese War 1904-1905: Reports from Naval Attachés* (republished by Battery Press, no date), pages 403-404.

⁶³⁶ See discussion of naval gunnery and fire effects, Chapter Three, for details on this debate and the positions of Pakenham and Jackson.

when confronted with exceedingly vivid experiences on highly salient points of contention, the observers went against the predictions of vividness.

The Experience of the First World War: Resetting Anchors?

The First World War was unarguably a traumatic experience for those who survived. On the basis of the anchoring heuristic we argued that the experiences of the First World War would change the narrative and lessons drawn from the Russo-Japanese War, which concluded in 1905. The data on assault tactics, artillery, and naval gunnery generated during the First World War and emphasized in four years of bleak battle should provide a powerful anchor that could influence the way that later writers would write about the Russo-Japanese War. This “backwards anchoring” effect, as Jack Levy terms it, should influence the military historiography of the Russo-Japanese War from 1918 and later. The data indicate that this is not the case.

While most military writers shifted their focus to digesting the lessons of the First World War after 1918, there were still some significant works produced on the Russo-Japanese War. Most notably the third, and final, volume of the British *Official History (Naval and Military)* was published in 1920. This document was over 1,000 pages of text, with a few hundred pages of separate appendices bound separately⁶³⁷. Secondly, there were a few books that attempted to look at the Russo-Japanese War to see if the horrors of 1914-1918 had

⁶³⁷ Only 1,800 copies of this volume were published. The separate appendices were bound with thread, but not placed within the binding. Instead they came in a separate companion box, along with oversized maps. A complete set is therefore exceedingly rare.

been foreshadowed in Manchuria. Third, there were the memoirs of military leaders who rose to prominence (and infamy) during the Great War, and whose earlier experiences included observer service during the Russo-Japanese War.

The conclusions of observers and commentators about a diverse set of tactical, operational, strategic, and naval issues do not seem to indicate any changes from those who wrote before 1914 and those who wrote after 1918. Certainly after 1918 there were new topics in some texts. In Kearsey and the British *Official History (Naval and Military)* the authors indulged in speculation about the possible effects of aircraft⁶³⁸ and submarines⁶³⁹. Yet beliefs about what happened in Manchuria during 1904-05 did not seem to undergo much of a shift. After the First World War commentators were still divided about whether the slow rate of Japanese advance was justified, whether surprise was a major factor, whether discipline or offensive spirit was more important, and whether the Japanese adhered to German infantry assault tactics⁶⁴⁰.

⁶³⁸ Kearsey and the Official History argued that aircraft would have improved the reconnaissance of both parties. Thus, errors due to faulty reconnaissance would be reduced. Most importantly this meant that Kuropatkin would have been aware at Liao-yang that Kuroki had split his forces astride the river, and that the Japanese had exhausted their reserves early in the battle. With this knowledge Kuropatkin would have been able to shift to the offensive, and score a victory, possibly a decisive victory, at Liao-yang. Great Britain Committee of the Imperial Defence (Historical Section) *Official History (Naval and Military) of the Russo-Japanese War Volume 2: Liao-Yang, the Sha Ho, Port Arthur* (His Majesty's Stationary Office 1912), page 206

⁶³⁹ Submarines, it was argued, would have made the Japanese more cautious about the use of their battlefleet, though possibly they would have improved the results of the sneak attack on Port Arthur.

⁶⁴⁰ The pre-World War One near unanimity on suppressive fire, indirect fire, hasty entrenchments, and decisive branches make these a poor test of the hypothesis. The only naval document following the First World War is the *Official History (Naval and Military)* third volume, which includes a discussion of Tsushima.

As the attentive reader may perhaps anticipate, the exception to this is general pattern is cavalry. Those accounts produced after the First World War all conclude that the performance of cavalry was poor, as opposed to the pre World War view where there was a debate between those who thought it was poor and those who felt that it was mixed. Furthermore, after the war the commentators were unanimous that the preferred tactic was mounted infantry, with no advocates of shock or dragoon tactics to be found. Those commentators who discussed the issue of ground, Burne and the *Official History (Naval and Military)*, also concluded that the ground was good.

In addition to the aggregate result it is worth looking in detail at the writings of three generals; Ian Hamilton, Smith-Dorrien, and Hoffmann. Smith-Dorrien had run British infantry training after the Russo-Japanese War, and Ian Hamilton and Hoffmann were observers. All three of them wrote on the subject of the Russo-Japanese War during the interwar period.

Hoffmann, who served as Chief of Staff on the Eastern Front, and who masterminded the German counterattack at Tannenberg in East Prussia and after the Brusilov Offensive in Austria-Hungary, wrote two books discussing the war, in which he touched on the subject of the Russo-Japanese War. At Tannenberg, the Germans had to contend with the First Russian Army, under Alexandr Samsonov, and the Second Russian Army, under Paul von Rennenkampf. Samsonov and Rennenkampf both commanded Corps in the Russo-Japanese War, and, after a failed counterattack by Samsonov, Samsonov accused Rennenkampf of failing to support the effort. The two generals broke into a fist fight in front of their men. Hoffmann wrote that

the mutual explanations became rather heated, and both gentlemen boxed each other's ears. They had been torn apart, and the Tsar had forbidden them to fight. I made certain that Samsonoff [*sic*] would now be paid out. I don't know whether the scene at Mukden was at the bottom of it, but it did, in fact, not occur to Rennenkampf to march to Samsonoff's assistance⁶⁴¹.

Hoffmann knew that he faced two Armies commanded by these Generals in 1914. While Hoffmann explicitly used his personal knowledge of the Russian high command, and first hand knowledge of Russian operating proficiency, to successful ends on the Eastern Front, he did not critically revisit the lessons of the Russo-Japanese War.

Ian-Hamilton did have occasion to revisit the subject, in penning a lengthy forward to Lieutenant Colonel Burne's analysis of the Liao-yang campaign. In the intervening years Ian-Hamilton had risen to command the Allied landing at Gallipoli. This was a fiasco, and ended Ian-Hamilton's career, as well as the lives of thousands of Allied soldiers⁶⁴². Many of these casualties were inflicted in failed offensives, such as the three battles of Krithia, in which the Allies tried to break out of the beaches. Miscarried offensives had wrecked the British army and Ian Hamilton's career in the First World War. How did this change his outlook on the Russo-Japanese War?

⁶⁴¹ Major General Max Hoffmann, *War Diaries and Other Papers* (translated by Eric Sutton, 1929, Naval and Military Press Ltd, 2004), page 14.

⁶⁴² Gallipoli was stand out disaster, even in the context of a costly and frustrating war. An audacious plan, it involved landing an Allied Army on a Turkish peninsula. Once landed they would be supported by heavy guns on coastal monitors and the battlefleet. The goal was to move off the beaches and force Turkey out of the war, opening the Bosphorus to Allied shipping and allowing for the resupply of the faltering Russian war effort. Instead the armies never left the beach, and were for months pounded by Turkish fortifications surrounding the beach. Echoing the loss of *Hatsuse* and *Yashima* in 1904, the naval force was decimated by mines and submarine attacks. After opposing withdrawal, Ian Hamilton was relieved. Eventually the Allies evacuated their beachheads, and Ian Hamilton's military career was over.

The answer was that it changed very little. He discusses how at Liao-yang Kuroki's "army was virtually beaten. The Guards across the Tai-tzu had not a kick left in them. But Kuroki's nerve held; Kuropatkin's did not"⁶⁴³. He also notes, in an italicized passage, that the "*worst of the defensive attitude is the difficulty, moral and physical, of passing effectively out of it into the offensive [emphasis original]*,"⁶⁴⁴. He compares Kuropatkin to Jellicoe in temperament and mindset, and suggests that the Russians would have done better with a Beatty⁶⁴⁵. The analogy changed from Waggon Hill to Jutland, but otherwise the narrative is the same. Given an opportunity to revisit the situation he retains the same view, and that is that the offensive initiative of the commander was the critical determinant of success in what had been the longest bloodiest battle of the Russo-Japanese War up to that point.

The third author to focus on was General Sir Horace Smith-Dorrien. Like Ian Hamilton, Smith-Dorrien was fired during the First World War. Unlike Hamilton, he emerged with his reputation enhanced. Defying orders from Field Marshall Sir John French, Smith-Dorrien led the BEF's Second Corps in an active defense at the battle of Le Cateau, where he stopped the German advance. The German advance having been slowed, Smith-Dorrien advocated falling back after Second Ypres, to a shorter, more defensible line. French fired him. Smith-Dorrien's decisive and somewhat successful actions, especially in contrast to his

⁶⁴³ Lieutenant-General Sir Ian Standish Hamilton, "Foreword" in Lieutenant-Colonel A. H. Burne, *The Liao-Yang Campaign* (William Clowes, 1936) page vi.

⁶⁴⁴ Sir Ian Hamilton, "Foreword" in A. H. Burne, *The Liao-Yang Campaign* (op cit, 1936) page vii.

⁶⁴⁵ Jellicoe commanded the Grand Fleet at Jutland, Beatty commanded the Battle Cruiser Fleet. In the views of some, including seemingly Ian Hamilton, Jellicoe was overly cautious in his pursuit of the German High Seas Fleet at Jutland, while Beatty was daring to the point of recklessness in both personal and professional matters. Andrew Gordon, *The Rules of the Game: Jutland and British Naval Command* (John Murray, 1996).

rivals French and General Sir Douglas Haig, served to enhance his reputation after the war⁶⁴⁶. The devotion of Sir Horace and Lady Smith-Dorrien to soldiers' charities also helped to burnish his post war image.

In 1924 Smith-Dorrien wrote a short introduction to a textbook by the anonymous "Footslogger", which used the Russo-Japanese War through Liao-yang to illustrate points of the then current British doctrine. He argues that the advent of new technologies, such as trenches and hand grenades, and the advent of a new tactical system based on suppressive and lethal fires and cover and concealment for both attack and defense was all presaged by the Russo-Japanese War. Even after the First World War experience he maintains that the Russo-Japanese War was "the most interesting and most instructive modern campaign of open fighting which has ever taken place, and for that reason I consider it should be studied by all officers"⁶⁴⁷. Also as already noted he believes that the overriding lesson "was the marked advantage of the offensive"⁶⁴⁸, and he stresses the importance of commanders remaining on the offensive strategically and operationally. While Smith-Dorrien does not appear to have written on the Russo-Japanese War prior to 1914, this conforms with the views of British observers and both versions of the Official History. It also does not seem to reflect any lingering effects of the problem of the offensive 1914-1918.

⁶⁴⁶ A. J. Smithers, *The Man Who Disobeyed: Sir Horace Smith-Dorrien and His Enemies* (Leo Cooper, 1970)

⁶⁴⁷ General Sir Horace Smith-Dorrien, "Foreword" in "Footslogger" [*sic*] *A Short Account of the Russo Japanese War for Examination Purposes* (Foster Groom & Co, 1925) page vi.

⁶⁴⁸ Smith-Dorrien, "Foreword", (*sic*) page vi.

While there was far more detailed work done on the Russo-Japanese War prior to 1914 than there was after 1918, the results we have suggest that the First World War did not serve to reset the cognitive anchors of commentators writing on the Russo-Japanese War. On the important tactical questions there was no discernable change in the narrative over time, nor were intangible issues of surprise, spirit, and discipline altered by the Great War experience. It was only in cavalry where, in aggregate, we noticed a shift from a fragmented story, illustrating divisions between advocates of the *arme blanche* and advocates of fire, to a more cohesive story emphasizing the failure of cavalry despite ample circumstance to have played a role.

Moreover, looking at the three authors whose fates were indelibly tied to World War One; Hoffmann, Ian Hamilton, and Smith-Dorrien, when they returned to the subject of the Russo-Japanese War their postwar comments did not seem to reflect any lingering anchoring effects of the First World War. Thus we can conclude that the hypothesis that a traumatic event such as a world war would cause individuals to change their narrative of historical events was not supported by the facts in this case.

Analysis: Cognitive Heuristics

Ultimately, our investigation of cognitive heuristics is unfulfilling. Like the Bayesian approach discussed in chapter three, there were certain areas where we found clear support, others where we found just as clearly an apparent rejection, and some instances where the data were a muddle.

We found little support for the notion that commentators would conflate the ultimate result of war with a validation or rejection of the tactics employed. The Japanese were routinely chided for being too slow to follow up on success, too focused on breakthrough, too risk acceptant at Liao-yang, and too risk averse at Ulsan and the Yellow Sea. The Russian defensive tactics were largely praised, though the defensive operations and strategy were roundly pilloried. While we observed many instances of observers and commentators validating their own doctrine in the events of the Russo-Japanese War, we also observed many instances of these same writers critiquing different elements of their doctrine.

We saw clear cases of individuals disqualifying seemingly relevant experience for *ad hoc*, indeed trivial, reasons. Yet this was not done with any universal pattern, instead the pattern would seem to suggest groups based around concepts other than purely organizationally derived self interest. However we do not yet have the tools or framework to understand how these groups may be defined, what constitutes membership, and how discrepancy is measured.

We found incidents where particularly vivid experiences were relayed, and where observers seemed to take positions that reflected that vivid experience. More damagingly, we found cases where observers took positions on important issues in opposition to vivid experiences. Two British naval officers, on separate ships at Tsushima, were in human gore imbued, yet remained convinced that naval battles are won by sinking ships with heavy shells, not causing mayhem among the crew with medium shells. Three British officers visited a temple that had been the sight of fierce hand to hand combat where a modern samurai used his sword to butcher his adversaries. While they relayed the event in detail, their ultimate

conclusions on the war stressed fire, not cold steel. Even in cases where observers did seemingly agree with the vivid experiences, their colleagues who did not share the vivid experience also concurred. One didn't have to fall under fire with Captain Reichmann to get an understanding for the paralyzing effects of suppressive fire, as the seventeen other reports that stressed suppressive fire indicate.

The most recent wars of the observers certainly entered into their lexicon. Yet the observers and commentators remained broadminded, reaching into the Napoleonic, Revolutionary, and even Roman times to find parallels. Sir John French went to far as to explicitly reject the recent wars and base his defense of cavalry in a broad sweep of military history from the post-medieval times forward. Even in cases where there was an explicit professional and personal link with the last war, such as Ian Hamilton and Waggon Hill, the observer himself rejected the tactical analogies, arguing that open rushes were now prohibitively costly and risky against good troops.

As a specific extension of the last war idea, and also too look at the adjustment of cognitive anchors, we examined the literature on the Russo-Japanese War between 1918-1938, ie, during the period between the two World Wars. First, there wasn't very much of it, making the identification of suggestive quantitative relationships tenuous. We did identify three particularly important writings from this period. Max Hoffmann, an observer, admitted to using his personal knowledge of *Rennenkampf* and *Samsonov* at *Mukden* to engineer the destruction of the Russian armies at *Tannenberg*, and restated his views that the Russians were unable to think clearly about a strategic offense and envelopment and had an outdated tactical system. Ian Hamilton, who was disgraced by ineffective and wasteful offensives at

Gallipoli, remained convinced that the Russo-Japanese War demonstrated the importance of an offensive mindset in generals. Smith-Dorrien, who emerged from the First World War with his reputation enhanced by a vigorous active defense in 1914, calls for measured withdrawals in late 1914, and quarrels with French and Haig, also wrote that offensive mindset in the part of leaders was the overriding lesson of the Russo-Japanese War, though ancillary tactical lessons about entrenchments, mortars, machine guns, and the weakness of cavalry were also clearly demonstrated.

Most peculiarly, we found that cavalry continues to appear as a special case for many of our hypotheses. In our investigation of interest based explanations we found cavalry officers engaged in the kind of behavior predicted by self interest, while other branches did not. In our investigation of cognitive effects we see much stronger potentially confirming evidence of the cavalry reaching cognitive closure, disqualifying disconfirming data, and reaching for unreliable potentially confirming data. From Field Marshall French down to an anonymous German cavalry officer, cavalry soldiers appeared to behave differently. Interestingly, many non-cavalry observers saw the same behaviors among cavalry advocates at the time, and commented about them in their reports.

A central weakness of the cognitive approach is that it appears to be simply a collection of heuristics, not all of which suggest distortion in the same direction, and many of which are insufficiently bounded by the conditions under which we may or may not expect them to operate. This investigation matched that pattern, with some hypotheses where interesting results seemed to offer tantalizing clues to the observed patterns, balanced against other hypotheses that generated no explanatory power. We have, by deliberate design, not fully

explored issues of metaphors, analogies, and narrower, ideationally based biases. In the following chapter we will add this additional level of fidelity, using cognitive mechanisms as microfoundations for a broader cultural-cognitive approach, rather than relying on generally applied cognitive hypotheses.

Chapter 6: The Ideational Research Program

“There is, upon the whole, nothing more important in life than to find out the right point of view from which all things should be looked at and judged of, and then to keep to that point; for we can only apprehend the mass of events in their unity from one standpoint, and it is only the keeping to one point of view that guards us from inconsistency”⁶⁴⁹

In this chapter I explore the explanatory power of the ideational research program. In the previous chapters I tested Bayesian, bureaucratic interest, and pure cognitive approaches. I found that pure cognitive and Bayesian approaches were able to explain some patterns of learning, but that they also ran into areas where their predictions were at variance with empirical results. The bureaucratic interest model failed all but the simplest of “hoop tests”. However, I argue that the cultural-cognitive research program can explain a lot of the empirical data. Looking at the influence of a number of major strategists and tacticians whose ideas permeated military and naval thinking in the early twentieth century, I find that these ideas, working through cognitive channels, largely explained what lessons observers drew, what facts they emphasized, and what analytic measures they chose for confirming and narrating their version of the events in the Russo-Japanese War.

The chapter proceeds as follows. First, I will examine the issue of strategy, looking at the work of Alfred Thayer Mahan, Sir Julian Corbett, and Sir Halford MacKinder, each of whom proposed different theories of the strategic exercise of power. Mahan and Corbett both focused on sea power, while MacKinder was concerned about dominating the heartland and generating land power through the control geographically contiguous of resources. While

⁶⁴⁹ Lieutenant-General Rudolf von Caemmerer, *The Development of Strategical Science During the 19th Century* (authorized translation by Karl von Donat) (Hugh Rees, 1905), emphasis original. Here von Caemmerer is quoting Clausewitz, *On War*, book VIII, Chapter 6, but the translation is organic to the text.

both Mahan and Corbett saw sea power as the more important element, Mahan focused on dominating the sea by decisive battle. Corbett was more nuanced, and saw the interplay between sea power and military operations in a broadly defined concept of maritime warfare. Understanding the contentions and influence of these three different strategists provides substantial explanatory leverage on the lessons drawn by the observers to the Russo-Japanese War.

The second major section will look at the influence of Graf von Schlieffen in German military thought. Schlieffen's views, as projected through the German General Staff System on tactics, operations, and strategy largely explain the lessons drawn by the Germans, and the differences between the German lessons and those drawn by the others on issues of tactics, operations, and strategy. Throughout the German writing the influence of Schlieffen, through his analogy with Cannae and his unique concepts of discipline, tactics, operations, and command, clearly influence the vocabulary and concepts of German authors. It also explains the two very different views of the battle of Liao-yang, which the Germans saw as the decisive battle of the war, and which most others saw as a draw. Furthermore, I note Schlieffen's controversial emphasis on the role of the reserve in battle. While we have not examined reserves thus far, I go back and test whether this new element, which this theory predicts should separate adherents of Schlieffen from others, is manifest in the historical data, and conclude that it is.

The third major section focuses on the two contesting approaches to capital ship design at the turn of the century. Sir John Fisher and Alfred Thayer Mahan (again) led two very different schools of thought on capital ship armament, and their views predate, or are

coincident with, the major naval engagements of the Russo-Japanese War. I show how the followers of both Fisher and Mahan focused on different analytic measures of success, and using these two sets of analytic measures, drew entirely different conclusions from the lessons of the Russo-Japanese War. The common concepts and models brought by both groups influenced the way that they perceived gun effects, questions of navigation, and naval tactics.

From these four sections, I therefore conclude that the cultural-cognitive approach generates the most explanatory power, as compared with the Bayesian, bureaucratic interest, and pure cognitive approaches. It explains the pattern of division of the observers and commentators on matters as diverse as naval gunfire, tactical reserve fractions, command and control, assault tactics, and sovereign debt. Just as importantly, it explains why there were not observed differences in other areas, such as the role of torpedoes and mines and indirect fire tactics. The different cultures examined here point to clear wedge issues where unique causal relationships can be expected, such as Schlieffen's emphasis on envelopment as the only way to decisively win a battle.

As argued earlier, to be successful the cultural approach rests on cognitive microfoundations, that is, the way that cultures operate is through cognitive channels. This helps us to see why some pure cognitive hypotheses, such as the winner uncritically seeming to have the best tactical system, failed. It also helps us have appropriate groupings to understand how the confirmation bias applied; i.e., not to the degree of symmetry between the doctrine of the observers' own military, but the degree of symmetry between the doctrine of the observer's culture. In only one instance, that of the Schlieffen approach, was the culture largely

confined within a single country. The cultural influence of Mahan, Mackinder, Corbett, Fisher, and cavalry doctrine over strategy, operations, and tactics was transnational.

The Strategic Exercise of Power at the Turn of the Century

The late nineteenth century saw the emergence of various rival approaches concerning the strategic exercise of force. Alfred Thayer Mahan and Sir Julian Corbett both emphasized the importance of naval power, though they had their differences. While Mahan saw sea power as the dominant expression of strategy, Corbett saw an interplay between sea power and military power. Sea power was a *sine qua non* for strategic success, but it was not sufficient. In contrast, Sir Halford MacKinder elucidated a strategic vision based on control of the heartland, i.e., land power.

One of the central theories of military power was put forward by an American naval officer of an otherwise as yet undistinguished career, Captain Alfred Thayer Mahan⁶⁵⁰. Captain Mahan, in a historical discussion of naval power in the age of sail⁶⁵¹, built a coherent theory of the exercise of seapower, the interrelation between seapower and economic power, and

⁶⁵⁰ The discussion of Mahan that follows is of necessity a broad gloss drawn from the following sources. Donald M. Schurman, *The Education of a Navy: The Development of British Naval Strategic Thought, 1867-1914* (University of Chicago Press, 1965); Paul M. Kennedy, *The Rise and Fall of British Naval Mastery*, revised edition, (Promethius/Humanity, 2006); Jon Tetsuro Sumida *Inventing Grand Strategy and Teaching Command: The Classic Works of Alfred Thayer Mahan Reconsidered*, (Johns Hopkins University Press, 2000) Margaret Tuttle Sprout, "Mahan: Evangelist of Sea Power," in Edward Mead Earle, with Gordon Criag and Felix Gilbert (eds) *Makers of Modern Strategy: Military Thought from Machiavelli to Hitler* (Princeton University Press 1971) Philip A. Crowl, "Alfred Thayer Mahan, Naval Historian," in Peter Paret, (ed) *Makers of Modern Strategy Second Edition* (Princeton University Press 1986) pages 444-480.

⁶⁵¹ While Mahan is indelibly linked with the battleship and, in the United States, the Great White Fleet, people often forget that his seminal work, *The Influence of Seapower Upon History*, was subtitled *1660-1783*.

the linkage between seapower, economic power, and Great Power status. The argument had two critical elements. Military power was dependent upon economic power generated from ocean borne trade, and ocean borne trade could be best protected and attacked through a concentrated battlefleet.

Mahan's argument is that international commerce and economic linkages form the sinews of power. High value trade crosses sea lanes, and thus landlocked countries are inherently less able to generate wealth, while island nations have the advantage of having a strong merchant fleet. Land powers also have to contend with the cost and expense of maintaining an army, while island powers can rely on the oceans to protect against invasion. In the event of war, it becomes essential to destroy the commercial base of the enemy, thus eliminating their ability to generate military power. However commerce is best destroyed not through raiding, but through command of the seas. Raiding will destroy specific elements of commerce, by sinking hulls, but broad commerce and communication will still flow. Instead the aspiring Great Power needs to build a concentrated battlefleet in order to destroy the enemy's battlefleet. The battlefleet needed to be concentrated to ensure that maximum power could be brought into the decisive battle. Dividing the fleet was to be avoided, as it risked the piecemeal destruction of battleships⁶⁵². Once the enemy loses its warships, commercial shipping can be shut down with impunity through blockade of ports and the destruction of individual merchant ships remaining at sea.

⁶⁵² Inherent in this was the notion that battleships took a relatively long time to be built. Making good the loss of a fleet, and its crew, could take years; where comparatively raising and equipping an army was less time consuming.

Mahan's argument is based on the historical experience of British and French rivalries during the 17th and 18th centuries, later expanded to include a study of the US and Britain in the War of 1812. From a detailed examination economic trade statistics and a comparison of the rival fleets, Mahan was able to find support for his theory. The theory was immediately picked up by advocates of naval power, and, to a lesser extent, imperialism within the United States, Japan, and Europe⁶⁵³. These concepts shaped the design of the United States Navy, as well as the naval policies of other nations⁶⁵⁴. Mahan himself became an international celebrity, feted by no less than the Prime Minister of England⁶⁵⁵. The power of these ideas was striking and long lasting within the US Navy, causing, sixty years after Mahan, an exasperated Henry Stimson to write of "the peculiar psychology of the Navy Department, which frequently seemed to retire from the realm of logic into a dim religious world in which Neptune was God, Mahan his prophet, and the United States Navy the only true church"⁶⁵⁶.

⁶⁵³ Imperialism was a problematic issue for Mahan. He felt it was necessary to acquire secure overseas coaling stations and control over important navigational passages, and to have trading partners, but he vacillated on the attractiveness of colonies and empire.

⁶⁵⁴ On the United States see Edward Rhodes, "Sea Change: Interest-Based vs Cultural-Cognitive Accounts of Strategic Choice in the 1890s," *Security Studies* 5:4 (Summer 1996) pages 73-124; Peter Trubowitz, Emily O. Goldman and Edward Rhodes (editors) *The Politics of Strategic Adjustment: Ideas, Institutions, and Interests* (Columbia University Press, 1999); William L. Tazewell, *Newport News Shipbuilding: The First Century* (Newport News Shipbuilding and Dry Dock Company, 1986) page 59.

⁶⁵⁵ Donald M Schurman, *The Education of a Navy: The Development of British Naval Strategic Thought, 1867-1914* (University of Chicago Press, 1965) page 66

⁶⁵⁶ Henry Stimson (1948) quoted in Philip A Crowl, "Alfred Thayer Mahan, Naval Historian," in Peter Paret, (ed) *Makers of Modern Strategy Second Edition* (Princeton University Press 1986) page 444. On the endurance of Mahan's original vision see Jim Roberts, "Always Great Ships' On the 100th Anniversary of the Great White Fleet," Newport News Shipbuilding / Northrop Grumman Corporation *Yardlines* (December 2007)

Corbett, like Mahan, was an advocate of sea power⁶⁵⁷. Like Mahan, he argued that sinews of power were economic, and flowed through the world's seas. Corbett and Mahan were contemporaries, shared a mutual respect, and even collaborated on some projects⁶⁵⁸. However he dissented from Mahan in a number of important respects. His formulation of a separate theory of maritime power has been given far less attention than Mahan's naval power, both at the time and by modern historians and strategists. Michael Handel judged Corbett to be "at the top of the second tier in the pantheon of classical strategic theorists"⁶⁵⁹. Specifically, Corbett was far more sensitive to the risks that fleets ran in pursuit of decisive battle. He thus advocated a prudent use of sea power, including division of the fleet if necessary, with an emphasis on not losing, as opposed to seeking and winning, a sea battle⁶⁶⁰.

Like Mahan, he argued that ships were irreplaceable within the span of a normal war, but he thought this would drive naval commanders to preserve the fleet in a protected harbor or

⁶⁵⁷ Donald M Schurman, *The Education of a Navy: The Development of British Naval Strategic Thought, 1867-1914* (University of Chicago Press, 1965); Sir Julian Corbett *Some Principles of Maritime Strategy* (originally 1911), republished in David Jablonsky (editor) *Roots of Strategy: Book 4* (Stackpole Books, 1999); John B. Hattendorf, "Mahan is Not Enough: Conference Themes and Issues," in James Goldrick and John B Hattendorf (editors) *Mahan is Not Enough: Proceedings of a Conference on the Works of Sir Julian Corbett and Admiral Sir Herbert Richmond* (Naval War College Press / Diane Publishing, 1993) pages 7-12; John B. Hattendorf and Donald M. Schurman "Introduction," in Sir Julian Corbett, *Maritime Operations in the Russo-Japanese War 1904-1905*, volume 1 (US Naval Institute Press, 1994); Azar Gat, *The Development of Military Thought: The Nineteenth Century* (Oxford University Press, 1992, reprinted 2000); Michael I. Handel, "Corbett, Clausewitz, and Sun Tzu," *Naval War College Review* (Autumn 2000) pages 106-123; Geoffrey Till, "Corbett and the Emergence of a British School?", in Geoffrey Till (editor) *The Development of British Naval Thinking: Essays in Memory of Bryan Ranft* (Routledge, 2006) pages 60-88

⁶⁵⁸ John B. Hattendorf, "Mahan is Not Enough: Conference Themes and Issues," in James Goldrick and John B Hattendorf (editors) *Mahan is Not Enough: Proceedings of a Conference on the Works of Sir Julian Corbett and Admiral Sir Herbert Richmond* (Naval War College Press / Diane Publishing, 1993)

⁶⁵⁹ Michael I. Handel, "Corbett, Clausewitz, and Sun Tzu," *Naval War College Review* (Autumn 2000) page 122

narrow sea until such time they were confident of success. If they were never confident of success command of the sea would never be *achieved* as an outright state, rather command would be *contested* based on the relative positions of different battle squadrons. Given the tendency of inferior fleets to seek protection in secure areas, military power was important, as military power could deny inferior fleets those protected areas, and force them to sortie. In the absence of a military threat the fleet could exist, in being, almost indefinitely, and project a limited power merely through its existence. Furthermore, a fragmented fleet could be useful, as a concentrated fleet might be lured out of a safe area by the prospect of destroying a detachment of the enemy. If the fragmented fleet could speedily concentrate it might take advantage of such a lure to bring about a decisive battle. Thus speed had strategic importance⁶⁶¹.

Corbett also argued that while sea power was a *sine qua non* for great power status and strategic success, even achieving command of the sea in a Mahanian sense did not deliver victory. Instead military power was necessary. That power could be facilitated by complete command of the sea, or somewhat less so with contested command of the sea, but the military power would still be necessary. Corbett thus considered war within a *maritime*, as opposed to a *naval*, arena.

Corbett's critique, or refinement as some see it, of Mahan was not as well received as Mahan's work. With its emphasis on the calculated avoidance of the decisive battle, its

⁶⁶⁰ He referred to the overriding principle of concentrating the fleet as "a kind of shibboleth". Michael I. Handel, "Corbett, Clausewitz, and Sun Tzu," *Naval War College Review* (Autumn 2000)

⁶⁶¹ I will later argue that this strategic importance of superior speed would also lead Corbett to become involved on the debate over the tactical advantage of speed on the side of Sir John Fisher.

recognition that some seas were unsafe for even a powerful battlefleet, the notion that contested seas may be a long run standard during wartime, and its notion that even if decisively achieved, command of the sea would not, in and of itself, necessarily guarantee a successful war, it was unpopular with many contemporary naval thinkers. Moreover, Corbett was a civilian. While he was a close ally of Admiral Sir John Fisher and served as the official historian to the British Navy, he was still never a serving naval officer, and that did not help Corbett with naval traditionalists, such as Custance⁶⁶².

In the next sections I will show how the strategic concepts of Mahan and Corbett permeated the observer reports and comments of the British and American writers, while those of MacKinder were emphasized by the German observers of the Russo-Japanese War. I argue that this Mahanian influence explains why both professional naval and professional military observers often concluded that sea power was more important than military power in explaining the results of the Russo-Japanese War. Not only is this result empirically consistent with Mahanian thought, but more importantly, the writers specifically evoked the concepts that Mahan had been propagating for fifteen years, and which had already begun to resonate with senior policy makers and military leaders in the 1890s. This includes the nexus

⁶⁶² During the First World War events proceeded almost exactly as Corbett had foreseen. The German High Seas Fleet remained largely in the protected waters of the Baltic, occasionally foraging into the North Sea. In an effort to bring about a battle the British divided the Grand Fleet, trying to use the fast battlecruisers as bait. This succeeded at Jutland, but the High Seas Fleet escaped destruction, and actually sank quite a few British ships, including three battlecruisers and three armoured cruisers. Yet the Germans never again sought fleet action. The British commander, Admiral Sir John Jellicoe, was pilloried, and critics claimed to detect Corbett's corrosive and passive influence. The decisive naval battle almost all predicted had not occurred, and many blamed Corbett. Corbett's own role as historian, and defense of Jellicoe's caution at Jutland, only added fuel to the critics' fire. Following Corbett's death the third volume of his Great War history was released, and this one contained a disclaimer by the admiralty, noting that they did not concur with Corbett's praise of Jellicoe's approach of avoiding battle. Andrew Gordon, *The Rules of the Game: Jutland and British Naval Command* (John Murray, 1996) page 544-548

between command of the sea and economic power and the concentration of a fleet of capital ships with the aim of destroying the adversary's capital ships, which will be dealt with in two separate sections. The power of Mahanian thought shaped how these individuals examined and reported the events of the Russo-Japanese War.

Mahanian Decisive Naval Battle and the Russo-Japanese War

The Mahanian concept of decisive battle as the key for achieving command of the seas, and thus ultimate victory, was seen as a guide throughout many of the various accounts. Even when they did not cite Mahan directly (as many did), the observers and commentators criticized the Russians for dividing their fleet between Baltic and Pacific, and further dividing the Pacific Fleet between Vladivostok, Chemulpo, and Port Arthur. When the Baltic fleet arrived in the East, Rozhdestvensky's tactic of splitting into two columns was criticized by the naval experts⁶⁶³.

Perhaps more powerful for the ideational approach, was the fact that army officers made the same critiques. Lieutenant Colonel Kearsey, while an army officer echoed Mahanian sentiments, noting that the object of the Japanese was to acquire command of the sea by

⁶⁶³ Captain Alfred Thayer Mahan, "An Account of the Great Naval Battle of the Sea of Japan" in Davis, Richard Harding (editor) *The Russo-Japanese War: A Photographic and Descriptive Review* (Cassell, 1905); "Reflections, Historic and Other, Suggested by the Battle of the Japan Sea" Congressional Testimony, Committee on Naval Affairs 14 January 1907, 59th Congress, 2nd Session, Document 213, bound as *Size of Battle Ships* (no date, no publisher); Admiral Sir Reginald Custance, *The Ship of the Line in Battle* (William Blackwood & Sons, 1912); Pakenham report "Comments on the Battle of the Sea of Japan," 6 May 1905, Great Britain Admiralty Intelligence Office *The Russo-Japanese War 1904-1905: Reports from Naval Attachés* (republished by Battery Press, no date).

focusing the fleet on the decisive battle, and dismissing the successful raiding of the Vladivostok squadron as ineffectual with respect to the outcome of the war⁶⁶⁴.

Mahan's own views on raiding were not so doctrinaire as later writers would have us believe. Mahan did recognize the utility of raiding, especially when raiders preyed on *military transport*, as opposed to commerce. However he felt that the effects of raiders were limited only to those ships that the raiders could actually destroy, and not as any broader deterrent or blockage of ocean borne traffic. Mahan cited the activities of Yessen's Vladivostok detachment during the Russo-Japanese War in support of his views.

Communications cannot be made inviolable; nor need they be, to be secure. 'Good partisan troops,' says Jomini, 'will always trouble communications, even the most favorably situated;' and the operations of an inferior fleet in being, depending for effectiveness upon its sudden furtive action, are merely those of a partisan body, raiding. The Japanese had one very unpleasant experience of this kind. The Russian Vladivostok squadron, which you will remember consisted of only three armored cruisers, on one of its raids in the Sea of Japan, captured two or three transports, on board one of which was a train of siege artillery. The loss of this is believed to have prolonged the siege of Port Arthur⁶⁶⁵.

Captain Pakenham, of the Royal Navy, argued that Russian naval efforts should have been focused on destroying the Japanese battlefleet, even to the extent of ignoring military transport in the Yellow Sea.

The transport fleet, from its unwieldy size and known place of anchorage, offers a more tempting objective than the warships; but it would show a complete misunderstanding of the relative importance to the Japanese of their naval and

⁶⁶⁴ Alexander H. C. Kearsy, *A Study of the Strategy and Tactics of the Russo-Japanese War 1904 Illustrating the Principles of War and the Field Service Regulations* (Gale & Polden 1935?) page 82.

⁶⁶⁵ Captain Alfred Thayer Mahan, *Naval Strategy: Compared and Contrasted with the Principles and Practice of Military Operations on Land, Lectures Delivered at the U S Naval War College, Newport, R. I., between the years 1887 and 1911* (Little Brown & Company, 1911) page 402.

military forces to expend strength in naval attacks upon the later. Japan could now better spare 20,000 men than a single battleship⁶⁶⁶.

In this respect he was actually somewhat more Mahanian than Mahan was himself.

The Mahanian influence could be seen among members of the US Army, as well as the Navy. Major Kuhn, who was observing the siege of Port Arthur from the Japanese vantage, was deeply impressed by the lethal fire from the Russian fortifications. However, he did not advocate bringing in naval gunfire to assist in the siege because, whatever benefit it might bring to the Japanese Army, it was an intolerable risk to a fleet that was needed to enforce command of the sea.

In view of the destruction of the *Hatsuse* and the *Yashima* by mines, it seems possible that Admiral Togo was influenced more by the latter in changing his position during his later bombardments. Apparently the Japanese naval commanders appreciated the importance of preserving the ships for naval operations against Russian fleets and were unwilling to risk any losses by serious bombardments of the forts. That their decision was a wise one will probably not be questioned⁶⁶⁷.

Command of the Sea, Economic, and Military Factors in the Russo-Japanese War

The interplay between command of the sea, economic power generation, and the dependency of land warfare on sea power, were issues that were clearly illustrated by the observers, though they alluded to the distinct concepts of Mahan and Corbett. The importance of economic factors in driving the conclusion of the war is also noted. As opposed to the German accounts (discussed in the next major section) these accounts

⁶⁶⁶ Pakenham report 10-12 May 1904, Great Britain Admiralty Intelligence Office *The Russo-Japanese War 1904-1905: Reports from Naval Attachés* (republished by Battery Press, no date), page 75.

⁶⁶⁷ Joseph Kuhn report, page 178, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo-Japanese War* (volume 2) (US Government Printing Office, 1906)

included a discussion of the ongoing economic context in which Russia and Japan were fighting.

To note that Mahan was a Mahanian may be a bit pedantic. However Mahan argued that the strategy adopted by the Japanese in the Russo-Japanese War did *not* confirm the fleet-in-being concept, despite the fact that the Japanese were, on paper, an inferior force to the Russians initially.

The Fleet in Being School, which in fundamental conceptions is one with the so styled Blue Water School, attributes to naval force itself, independent of other factors, an importance and efficacy which in my judgment are exaggerated... The difference between the course followed by the Japanese and the proposition held by the Fleet in Being Schools, as a whole, is that the Japanese, upon a fair calculation of probabilities, took a decisive step, a step that was bound to lead to results, despite the near presence of a strong hostile fleet; that they did not try to win without taking any risks, but only, to quote Napoleon, by getting the most chances in their favor⁶⁶⁸

Aston, as might befit a Royal Marine, showed far more sensitivity to Corbett's concepts⁶⁶⁹.

While he too chides the Pacific Fleet for inaction, he does acknowledge that even the extremely passive behavior of the Russian fleet proved to be of advantage to Russia, for in addition to the blockade burden placed on the Japanese fleet it tied down through January

an army of four Divisions, the First, Seventh, Ninth, and Eleventh, with a heavy siege train and other units. The total losses suffered by this army between the 26th of June and the surrender amounted to nearly 58,000 killed, wounded, and missing, and nearly 34,000 incapacitated by sickness⁶⁷⁰.

⁶⁶⁸ Captain Alfred Thayer Mahan, *Naval Strategy: Compared and Contrasted with the Principles and Practice of Military Operations on Land, Lectures Delivered at the U S Naval War College, Newport, R. I., between the years 1887 and 1911* (Little Brown & Company, 1911) pages 428- 429

⁶⁶⁹ The Royal Marines were conceived to fight in maritime warfare. Unfortunately Aston is the only Royal Marine to make comments about the Russo-Japanese War, and no American Marines wrote contemporary pieces on the operations. While it is intriguing to suspect that, more generally, Marines would be predisposed to accept Corbett, there are not enough data in this case to draw robust conclusions.

⁶⁷⁰ Major-General Sir George Aston, *Letters on Amphibious Wars* (John Murray, 1920) page 334

General Aston also believed that it was clearly proven “that the command of a maritime region is ensured primarily by a navy, and secondly by positions suitably chosen upon which the navy rests, and from which it can exert its strength”⁶⁷¹. Those positions, of course, refer to militarily secure ports and narrow seas.

Similarly, Rowan-Robinson argued that the naval balance helped to determine the course of the campaign on the ground, and focused on the presence of the main battlefleet in Port Arthur as guiding the whole concept of operations for Oyama, and the detachment of Nogi’s Fourth Army, despite the critical need for it at Liao-yang. However he dismissed the raiding actions of Jessen’s force in Vladivostok. Despite being successful in their own right, they had no bearing on the conduct of the war on land, and as a result were a wasted force⁶⁷². The consequences of naval mistakes weighed heavily on purely military matters.

Foreshadowing Winston Churchill’s comment about Jellicoe’s role at Jutland, and clearly indicating the influence of Corbett, the British Official History noted that from “the beginning of the war Japan was so placed that defeat at sea would have been disastrous, while victory, however complete, was no more than a supremely important step towards the defeat of the Russian army”⁶⁷³. Corbett, of course, concurred, noting that “no offensive

⁶⁷¹ George Aston, (*ibid*) page 241

⁶⁷² Major H. Rowan-Robinson, *The Campaign of Liao-Yang* (Constable & Co., 1914) page 166-169

⁶⁷³ Great Britain Committee of the Imperial Defence (Historical Section) *Official History (Naval and Military) of the Russo-Japanese War Volume 1: To August 1904* (His Majesty’s Stationary Office, 1910) page 392. Churchill had said that Jellicoe was “the only commander on either side capable of losing the war in a single afternoon”. The sentiment repeats itself in other discussions of Togo. Each action risking the Japanese battlefleet jeopardized the Japanese war effort. See also comments by Pakenham, 10-12 May 1904, Great Britain Admiralty Intelligence Office *The Russo-Japanese War 1904-1905: Reports from Naval Attachés* (republished by Battery Press, no date), page 75.

movement must be undertaken which risked the permanent control of the vital zone”⁶⁷⁴. Togo needed to ensure that he did not expose his fleet to loss due to mines or defeat in detail while dealing with the main force at Port Arthur, Admiral Yessen’s detachment at Vladivostok, and whatever coastal operations were under consideration. Thus “the danger which holds back the Navy is not danger to men but danger to irreplaceable ships”⁶⁷⁵. The need to preserve the Japanese battlefleet caused Togo to have to wait for the eventual sortie of the Pacific Fleet. Corbett goes on, arguing in conclusion that it “was not, then, that the Japanese success in the first two stages of the war was due to their having command of the sea; but that they were able to prevent the Russians from obtaining it... With these considerations may be compared the Duke of Wellington’s final dictum on the Peninsular war”⁶⁷⁶.

Both the British and Americans were clearly aware of the larger strategic and economic context of the war. Not only did they recognize its economic causes (as did almost all other observers) but, more to the point, they recognized the interplay between the naval situation, the economy, and the war effort. A British artilleryman, Major Rowan-Robinson, early in his

⁶⁷⁴ Sir Julian Corbett, *Maritime Operations in the Russo-Japanese War 1904-1905*, Volume II, (originally a confidential publication of the Committee on Imperial Defence, 1914, republished by US Naval Institute Press, 1994), page 391.

⁶⁷⁵ Sir Julian Corbett, *Maritime Operations in the Russo-Japanese War 1904-1905*, Volume I, (originally a confidential publication of the Committee on Imperial Defence, 1914, republished by US Naval Institute Press, 1994), page 328.

⁶⁷⁶ Sir Julian Corbett, *Maritime Operations in the Russo-Japanese War 1904-1905*, Volume II, (*op cit*), page 394. Corbett relays the final dictum as “it is our maritime superiority which gives me the power of maintaining my army while the enemy are unable to do so.” Corbett (*ibid*) page 395.

analysis of the Liao Yang campaign, discussed the intricacies of international finance and its effects on the pace and objectives around which Japan decided to wage the campaign⁶⁷⁷.

More generally the relationship between the financial situation, rather than purely military and naval battlefield outcomes, and war termination was noted by General Aston, who argued

as far as one can gather, the main reason for the conclusion of the struggle was financial exhaustion of both sides... The whole question of the influence of financial considerations upon modern wars is one of extreme complication, and we need not consider it in detail, because it applies to all modern wars and not only to the amphibious wars to which we have been devoting our special attention⁶⁷⁸.

Aston goes on to note that

the war was unpopular in Russia, while it was enthusiastically supported by the population of Japan, who felt that they were fighting for their very existence. Towards the close of the war Russia had internal troubles, and the army was called upon to maintain order; this was another factor which led to a desire for peace⁶⁷⁹.

For Sedgwick too the war ended not with the indecisive engagement at Mukden, but with broader economic effects of the ongoing strain of war. "Internal disorders at home, [in Russia] and constant failure in the field had weakened their credit almost to the breaking point, while the Japanese also began to realize that the drain in their resources would soon become unendurable"⁶⁸⁰.

⁶⁷⁷ Major H Rowan-Robinson, *The Campaign of Liao-Yang* (Constable & Co., 1914) page 18

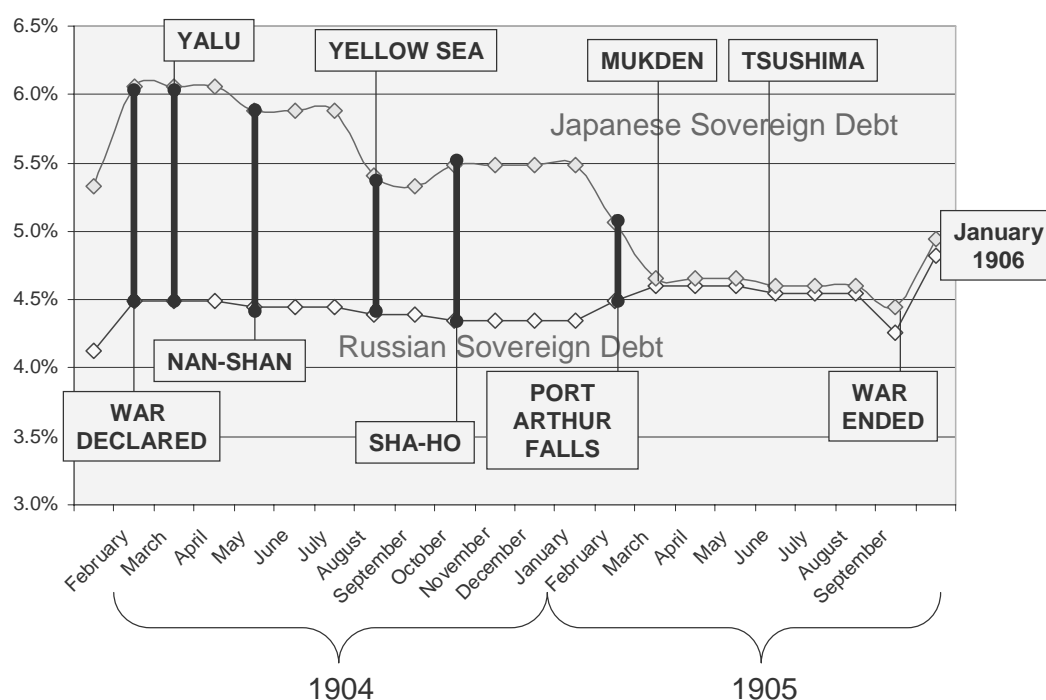
⁶⁷⁸ Major-General Sir George Aston, *Letters on Amphibious Wars* (John Murray, 1920) page 357.

⁶⁷⁹ Major-General Sir George Aston, *Letters on Amphibious Wars* (John Murray, 1920) page 357.

⁶⁸⁰ Captain F R Sedgwick, *The Russo-Japanese War on Land: A Brief Account of the Strategy and Major Tactics of the War* (Foster Groom & Co, 1906) page 120.

The *British Official History (Naval and Military)* contains a unique and remarkable section detailing the financial considerations that played a role in both Japanese and Russian policy⁶⁸¹. In it they provided data on the sovereign debt of the two countries overlaid with the critical battles of the Russo-Japanese War. The history notes that the Japanese needed early success in order to get borrowing costs down, and thus continue the war. The data presented in the table have been used to generate the chart below⁶⁸².

Figure 6-1: Japanese and Russian Borrowing Rates



⁶⁸¹ Great Britain Committee of the Imperial Defence (Historical Section) *Official History (Naval and Military) of the Russo-Japanese War Volume 1: To August 1904* (His Majesty's Stationary Office, 1910) pages 414-417.

⁶⁸² The table is slightly different, as British report quotes for standard 4% bonds at a percent of face value. By simply taking the 4% par value yield and comparing it with the market value of traded debt it is possible to generate a spot rate for sovereign interest rates, which is more intuitive. Great Britain Committee of the Imperial Defence (Historical Section) *Official History (Naval and Military) of the Russo-Japanese War Volume 1: To August 1904* (His Majesty's Stationary Office 1910) pages 415.

Notice, in particular, the spread (heavy line) between Japanese and Russian debt. Japanese debt trades at a much higher rate than the Russian, reflecting their status as a second rate power and speculative investment. The outbreak of war exacerbates the difference, and even Japanese success at Yalu and the costly success at Nan-shan have little influence on this discount. Decisively turning back the Russian Pacific fleet at the Yellow Sea cuts this spread, though the continued high cost of Japanese military success, exemplified at the Sha-ho, gradually erodes this progress. After the fall of Port Arthur the spread narrows considerably, disappearing almost entirely after Mukden. The Russians, despite their losses on the battlefield, are hardly affected in international credit markets, but by the end of the war Japanese debt is trading in line with Russian, suggesting a recognition by the capital markets of Japanese Great Power status.

The Mahanian view of international expansion, which called for empire only as so far as it would assist the fleet, was carried over into the US Army as well. Captain William V. Judson, of the US Army Corps of Engineers, criticized the development of Manchuria, by Russia, as a commercial enterprise before military development had been completed as a grievous flaw in Russian policy. He noted that historically

Russia's territorial expansion was planned with great military sagacity; but of recent years, a new element has been introduced. Expansion must, first of all, be made popular. Consequently, Russia's unfortunate expansion to the Yalu and the Yellow Sea was a strictly political and commercial enterprise, involving dangers which her professional soldiers understood and pointed out⁶⁸³.

⁶⁸³ William V. Judson report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 3) (US Government Printing Office, 1907) page 149.

The flaw in Russian policy was that their desire for empire, driven by domestic policy considerations, outstripped the military logic which should, in a Mahanian view, be the internal driver for, and check upon, expansionist efforts. Russia was thus dangerous exposed by having economic interests, such as the new port at Dalny and growing influence in the nominally independent Kingdom of Korea, which were not backed by sea control. Judson also drew the lesson that the United States needed to invest in improving her own Navy, and building (or subsidizing) a much larger merchant marine⁶⁸⁴. Judson's advocacy for increased naval spending, including a larger ocean going Navy and merchant marine, was based in what today would be termed "peace through strength", which is itself a derivative of the Mahanian Great White Fleet, and which was already been noted violates the bureaucratic politics approach. As Judson closed his report to the War Department his final paragraph read:

Finally, it may be said that when, under present conditions, two countries reasonably well prepared make war, the result is apt to be so near a draw that even victory is extremely unprofitable. This is a splendid fact, as it makes for peace and may eventually lead to partial disarmament by international convention. But countries which will not prepare for war, while others insist on preparations, are the countries who are so acting as to retain war in the scheme of civilization⁶⁸⁵

While differing in their account of the strategic use of sea power, the Mahanian and Corbett followers (as well as Mahan and Corbett themselves) agree about the importance of economic concerns. The definitive British Committee of the Imperial Defence history devoted time and attention to issues of credit ratings and capital markets, and army officers

⁶⁸⁴ William V. Judson report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 3) (US Government Printing Office, 1907) page 205.

⁶⁸⁵ William V. Judson report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 3) (US Government Printing Office, 1907) page 217.

spoke of the interplay between economics, seapower, and land warfare. Yet the naval and maritime approaches of Mahan and Corbett were not the only approaches to strategy. At the turn of the century a new approach, focusing on land power, began to gain in popularity.

Sir Halford MacKinder and the Heartland

Coincident with the outbreak of the Russo-Japanese War, a British geographer codified the case for land power in a lecture given to the Royal Geographic Society. Sir Halford J. MacKinder, director of the London School of Economics, argued that history was turning away from sea power⁶⁸⁶. Based on thousands of years of European history, MacKinder's argument was that the historical dominance of seapower was exaggerated, and was waning in modern times. Advances in the railroad and industrialization meant that more commerce could be moved over land lines, rather than the sea lanes. The greatest beneficiary of this shift was Russia. MacKinder specifically noted their ability to rapidly shift armies from Europe to Manchuria across the trans-Siberian railway⁶⁸⁷. This could have been specifically contrasted with the long time it would take Rozhstvensky's command to sail around the world, and the poor state of repair it found itself in when facing the Japanese a day or two away from the end of their voyage. With power shifting to Russia, the continental European states also gained more prominence. No longer would one need a navy to compete for great power status. Instead, internally generated resources, linked together by efficient networks

⁶⁸⁶ Sir Halford J. MacKinder, "The Geographical Pivot of History," *The Geographic Journal* 23:4 (April 1904) pages 421-437; Sir Halford J. MacKinder, Spencer Wilkinson, Sir Thomas Holdich, Mr. Amery [*sic*], Mr. Hogarth [*sic*] "The Geographical Pivot of History: Discussion," *The Geographic Journal* 23:4 (April 1904) pages 437-444; Paul M. Kennedy, *The Rise and Fall of British Naval Mastery*, (revised edition Prometheus/Humanity, 2006); Christopher J. Fettweis, "Sir Halford MacKinder, Geopolitics, and Policymaking in the 21st Century," *Parameters* (Summer 2000).

⁶⁸⁷ Sir Halford J. MacKinder, "The Geographical Pivot of History," *The Geographic Journal* 23:4 (April 1904) page 436

of railroads allowed for improved commerce and, as importantly, the ability to shift armies around to counter concentrate against any landing supported by a navy. Indeed, not only would counter concentration be facilitated, but, more importantly, MacKinder argued that armies had grown so large that naval transport would never be able to move and supply a large modern army. Very quickly the landing would be overwhelmed by armies moved by rail, and the beachhead would be lost⁶⁸⁸.

MacKinder's ideas spread rapidly. Mahan was aware of, and intrigued by, MacKinder's analysis. Very quickly MacKinder began to gain traction with policy makers, for his emphasis on the need for railroads, for his focus on eastern Europe as the key area of competition for control of the Eurasian landmass, and for his deëmphasis of naval power⁶⁸⁹. The notion that railways were making seapower obsolete were attractive to land powers, who were otherwise condemned to ineffective resistance to sea powers as per the theory of Mahan. MacKinder's ideas were publicized concurrent with the Russo-Japanese War, and so were unlikely to have influenced contemporary observations. But they were widespread by 1910, when many of the commentaries on the lessons of the war began to be published.

⁶⁸⁸ Sir Halford J. Mackinder, Spencer Wilkinson, Sir Thomas Holdich, Mr. Amery [*sic*], Mr. Hogarth [*sic*] "The Geographical Pivot of History: Discussion," *The Geographic Journal* 23:4 (April 1904); MacKinder's reply to Amery, page 442

⁶⁸⁹ Arthur R. Hall, "MacKinder and the Course of Events," *Annals of the Association of American Geographers* 45:2 (June 1955) pages 109-126; Arthur Butler Dugan, "MacKinder and His Critics Reconsidered," *The Journal of Politics* 24:2 (May 1962) pages 241-257

The German *Official Account* emphasized the importance of railways in their account of the Russo-Japanese War. The German study succinctly melded Moltke and MacKinder in their commentary.

‘Railways have acquired military importance as one of the most important means in the conduct of the war, and as an essential factor in all strategical plans...’ [sic] This strategic dictum of Moltke applies in quite a special measure to the Siberian – Eastern Chinese Railway in the campaign of 1904-05. It formed the only link connecting the Russian Army with its far distant home country, which alone was capable of furnishing reinforcements, making good losses in men and material, and also supplying the army with a very considerable amount of provisions... A permanent destruction of the railway would have been of the utmost importance directly before the decisive battle⁶⁹⁰

Indeed, throughout the German discussion of operations prior to Mukden they keep returning to the theme of the railroad, and draw many detailed operational lessons about how best to guard and use German railheads in the event of a European war, as well as how to advance along rail lines in order to maintain mobility. Elsewhere in the history they describe the running of the railroad as “truly marvelous” and note that throughout the entire war the Russians never ran into difficulties of supply, despite having lost command of the sea almost immediately upon the declaration of hostilities⁶⁹¹.

While the German *Official Account* made this case, those advocates of sea power schooled in the writings of Corbett and Mahan, whose thoughts we have detailed above, did not draw the same conclusions at all. Aston sets naval theory against MacKinder, noting that “the

⁶⁹⁰ German General Staff (Historical Section), *Between San de Pu and Mukden* [sic] Lieutenant Karl von Donat (editor and authorized translator) (Hugh Rees, 1913) pages 37-38. Reference to Moltke taken from “Moltke’s *Kriegslehren*,” Vol I, page 213, and translated by von Donat embedded as part of the text of the *Official Account*.

⁶⁹¹ German General Staff (Historical Section), *The Ya-Lu* Lieutenant Karl von Donat (editor and authorized translator) (Hugh Rees, 1913) page 249.

Power [*sic*] able to move troops by sea would have a great advantage over the Power [*sic*] able only to move by land in the theatre of war”⁶⁹². Brevet-Major W. D. Bird, also held a Mahanian view, simultaneously criticizing Russia’s dispersal of the fleet and regarding overland supply as inadequate⁶⁹³.

While the Germans expressed amazement with what the Russians had done with a single track railroad, the other observers consistently stressed how the railroad limited the ability of the Russians to move, and how the loss of command of the sea had continually hamstrung Russian operations. Prior to Liao-Yang Rowan-Robertson details a conference between Kuropatkin and his generals. Those at the conference “make full use of the old catch words: they will act on interior lines; they will retire and gain freedom of action; they will maneuver for an opening; they will operate on both banks of a river, etc... Defeat at sea, the loss of initiative, and the lack of an efficient secret service are taking a heavy toll in penalties”⁶⁹⁴.

The notions of land power and naval power conditioned what observers saw, and commentators confirmed their beliefs by citing examples from the Russo-Japanese War. Those writers who were influenced by Mahan and Corbett, despite their differences about naval strategy, agreed that the Russians were fighting from a disadvantage given their lack of sea control. In contrast, the German *Official Account*, drawing on the ideas popularized by MacKinder, and which MacKinder himself specifically connected to the Russo-Japanese

⁶⁹² Major-General Sir George Aston, *Letters on Amphibious Wars* (John Murray, 1920) page 223.

⁶⁹³ Brevet-Major W. D. Bird, *Lectures on the Strategy of the Russo-Japanese War* (Hugh Rees, 1911) pages 13-14.

⁶⁹⁴ Major H. Rowan-Robinson, *The Campaign of Liao-Yang* (Constable & Co., 1914) page 36

War, stressed the strength of what was even a track single railway. This single track, broken at Lake Baikal⁶⁹⁵, was able to sustain the entire Russian army in the field, and to bring reinforcements at a rate that surprised the Germans, and far outstripped what the Japanese, with their Mahanian notions of sea power, had themselves planned upon⁶⁹⁶.

Summary: Strategic Ideas and the Russo-Japanese War

In the preceding discussion I outlined the views of three major strategic thinkers active at the turn of the century, Alfred Thayer Mahan, Sir Julian Corbett, and Sir Halford MacKinder. These three had different conceptions of strategic issues and power projection. Mahan and Corbett focused on the generation of economic power through free trade enabled by command of the sea, while MacKinder focused on the exploitation and control of land mass and modern ground transportation infrastructure. Mahan and Corbett differed, however, in the specifics of naval strategy. Mahan argued that the objective was to mass the fleet for decisive battle. Corbett argued that when fleets were uneven, the weaker side would seek to avoid defeat, and could almost always do so by hiding in safe waters. Even while protected, the weaker fleet was able to exert some influence over the stronger fleet simply as a fleet in being. To beat this Corbett suggested using military power to capture the enemy's sanctuary, or divide the stronger fleet in an attempt to lure out the weaker. In order to avoid defeat in detail the divided fleet needed to have superior speed. The critical notion was that the stronger fleet mustn't risk itself in a futile effort attack the weaker in protected waters.

⁶⁹⁵ For most of the war Russian trans stopped on the western shore of Lake Baikal, and their passengers and equipment needed to be ferried across, where they would embark on a second train. During the War the Russians connected the two lines by laying track along the southern edge of Lake Baikal, but this became operational only after Liao-yang and other major land engagements.

⁶⁹⁶ German General Staff (Historical Section), *The Yalu* Lieutenant Karl von Donat (editor and authorized translator) (Hugh Rees, 1913) page 249

Mines and shore batteries made naval operations in narrow waters, or against fortified ports, very dangerous.

It is fortunate that MacKinder, Mahan, and Corbett all commented on the Russo-Japanese War, so we have their own statements as records. Corbett in particular wrote a two volume, thousand page, classified study of the Russo-Japanese War for the admiralty. Mahan lectured on the topic while at the Naval War College in Newport Rhode Island, and also published articles dealing with both the strategic and tactical lessons of the war. MacKinder used the Russian ability to move its armies to Manchuria at rates far exceeding what was expected as an example of the power of modern railways. It is perhaps not surprising, though it does add weight to our conjecture, that these theorists themselves saw their own respective theories, in all of their mutually exclusive details, confirmed in the experiences of the Russo-Japanese War.

More suggestive was the way that other observers and commentators echoed these ideas, and focused on different metrics for explaining what happened in the Russo-Japanese War. Some focused on the success of the trans-Siberian railway in moving the Russian army much faster than had been predicted, and Russian ability to concentrate at Liao-yang and Mukden (while conceding that the Russians lost, for entirely different reasons). Others focused on the role of command of the sea in deciding the fate of operations, even to the point that US Army officers were recommending that the US War Department increase its spending on the US Navy. Finally, some focused on the maritime nature of the operations, and the interrelation of military and naval operations in a balanced manner, especially pertaining to the Japanese operations around Port Arthur and Liao-yang.

It is also suggestive that the British Official History, which was Mahanian in so many ways, devoted attention to the role of the international credit markets in funding the Japanese war effort, and explained that Japan had succeeded when the credit spreads between Japanese sovereign debt approximated Russian spreads, and also that the Japanese needed to cease operations when the cost of the war debt crept up.

Yet there was more going on in the Russo-Japanese War than just matters of strategy. Military operations and tactics were also important areas for observers, and areas that the Bayesian, bureaucratic interest, and pure cognitive research programs could not explain very well. How well might a cultural-cognitive approach explain variation in operational and tactical matters? In many respects strategy may be the simplest for cultural-cognitive, because it is so abstract and subject to speculation. More technical tactical details, like the most effective caliber of naval gun, or the best way to approach a fortified position, should be less open to interpretation, and therefore harder for the cultural-cognitive approach. In the following two sections I will explore this in more detail, first examining military operations and tactics, and then examining naval tactics and capital ship design.

Envelopment, Annihilation, Schlieffen, and the German General Staff

At the turn of the century the German army was dominated by a strong professional General Staff system derived from the Prussian system. Even at the time this system was admired by other militaries, and the admiration of analysts and military professionals for the abilities of the General Staff seems to have only grown over time, despite the loss of two World

Wars⁶⁹⁷. It is not necessary to detail the history, strengths, and weaknesses of the General Staff system. The critical event for our purposes was the elevation, in 1891, of Field Marshal Alfred Graf von Schlieffen to the position of Chief of the General Staff. Schlieffen brought with him a narrow focus on operational art, which he applied as a substitute for both strategy and tactics⁶⁹⁸. Through the General Staff system he was able to disseminate and enforce his particular views on land warfare.

The elements of Schlieffen's concept of war were simple and interrelated. First, Schlieffen believed in vigorous offensive action on the part of the leader. He recognized that hostilities could bog down into positional warfare, and he wanted to avoid this long grind. Constant and vigorous offense could prevent the occurrence of this dangerous state⁶⁹⁹. Second, Schlieffen argued that decisive victory was a result of the envelopment of the enemy⁷⁰⁰. That is, the best form was to have units move around one, or better yet, both flanks of the enemy

⁶⁹⁷ Trevor N. DuPuy, *A Genius for War: The German Army and General Staff 1807-1945* (Prentice Hall, 1977) is an often cited laudatory account of the German Staff System. For a rarer, though more critical, view see David M Glantz "American Perspectives on Eastern Front Operations in World War II," paper prepared for First Soviet-American Collegium on the Problems of World War II History (October 1986).

⁶⁹⁸ On the enduring strategic bankruptcy of the General Staff see Michael Geyer, "German Strategy in the Age of Machine Warfare, 1914-1945," in Peter Paret, (ed) *Makers of Modern Strategy: From Machiavelli to the Nuclear Age*, Second Edition (Princeton University Press 1986) pages 527-597. Geyer argues that operational excellence is not a substitute for strategy. However the Germans persistently focused on operational issues to the exclusion of strategy, allowing them to continue to win impressive operational victories, such as Ludendorff's 1917 offensive and almost all battles in the Second World War through 1943, but these operational successes couldn't overcome strategic defeat, and in the 1917 case helped bring that defeat upon Germany.

⁶⁹⁹ Antulio J. Echevarria II, *After Clausewitz: German Military Thinkers Before the Great War* (University Press of Kansas, 2000) page 195.

⁷⁰⁰ Daniel J Hughes, "Schlichting, Schlieffen, and the Prussian Theory of War in 1914," *The Journal of Military History* 59:2 (April 1995) pages 257-277. Note that envelopment did not necessarily imply annihilation. Hughes argues, based on the original German text of Schlieffen's Cannae study, and

and then attack. Cut off from supplies and communication the encircled unit would be destroyed, and would not have the ability to conduct an organized retreat and preserve its fighting strength for another day. Third, Schlieffen decried the frontal attack. He recognized that modern firepower made frontal attack costly, and, even when successful in achieving the occupation of the ground formerly held by the enemy, the enemy force could often simply retreat largely intact, and remain a threat⁷⁰¹. Moreover, by being both costly and indecisive it prolonged war when compared to envelopment⁷⁰². Fourth, Schlieffen argued that in order to obtain decisive envelopment the enveloping wings needed to be as strong as possible. This implied using no more troops to hold the center as was absolutely necessary, in order for the excess to be devoted to the wings. Furthermore, it also implied sparse reserves for the attacker, as units placed in reserve were not able to effect the decisive moment within a battle⁷⁰³. Fifth, in order to execute such attacks in the face of modern fire Schlieffen believed that discipline in the troops was more important than offensive spirit or

specifically the rendition of the word “extermination” in English translations, that Schlieffen regarded annihilation as the highest form of art, but envelopment was good enough.

⁷⁰¹ Balck notes “Pure frontal attacks offer little prospects of success, they may perhaps force the enemy back, but they cannot annihilate him,” Colonel William Balck, *Tactics* revised edition (original 1908, translated by Lieutenant Walter Krueger, US Cavalry Association printing, 1915), volume 1, page 357.

⁷⁰² Antulio J. Echevarria II, “German General Staff Historian Hugo Frieher von Freytag-Loringhoven and the Dialectics of German Military Thought,” *The Journal of Military History* 60:3 (July 1996) pages 471-494.

⁷⁰³ Shimon Naveh, *In Pursuit of Military Excellence: The Evolution of Operational Theory* (Frank Cass, 1997), pages 92-96. This is the principle of “economy of force”, which does not, as it might at first seem, imply using the minimum force necessary to achieve an objective, but to apply the maximum possible force to the decisive point. Force not applied to the decisive point is not economical, as it has been squandered on some ancillary task, the success of which pales in comparison to success at the decisive point.

initiative⁷⁰⁴. Offensive spirit could break, and very quickly flip to panic, while discipline would be able to hold in even difficult circumstances. Sixth, and finally, Schlieffen was concerned about training the generals to command units that made aggressive maneuvers without losing their nerve. This necessitated a rigid adherence to the plan of the high command (this adherence being reinforced by their emphasis on drill and discipline early on) in the face of potential adversity. Schlieffen understood that warfare included elements of uncertainty, but wanted to overcome uncertainty through planning. If generals of strong character adhered to the plan in the face of a constant flood of contradictory and possibly alarming data, they would avoid assuming a less offensive posture prematurely⁷⁰⁵.

In addition to its doctrinaire inflexibility, Schlieffen's concepts had two important characteristics. First was a tendency to focus almost exclusively on operational art, that is, the positioning and movement of large formations to achieve military ends⁷⁰⁶. Not only was operational art seen as the primary focus, but the principles worked out in support of

⁷⁰⁴ Daniel J Hughes, "Schlichting, Schlieffen, and the Prussian Theory of War in 1914," *The Journal of Military History* 59:2 (April 1995) pages 257-277; Steven D. Jackman, "Shoulder to Shoulder: Close Control and 'Old Prussian Drill' in German Offensive Infantry Tactics, 1871-1914," *The Journal of Military History* 68:1 (January 2004), pages 73-104.

⁷⁰⁵ Baron Hugo Friedrich Philipp Johann Freiherr von Freytag-Loringhoven, *The Power of Personality in War* (originally 1911, translated by Oliver L Spaulding 1938, reprinted in *Roots of Strategy Book 3: Three Military Classics*, Stackpole Books, 1991). Wallach notes that Schlieffen would, in his war games, thrust relatively junior officers into senior command positions to test their ability to adhere to the plan. Jehuda L. Wallach, *The Dogma of the Battle of Annihilation: The Theories of Clausewitz and Schlieffen and Their Impact on the German Conduct of Two World Wars* (Greenwood Press, 1986) page 37.

⁷⁰⁶ The operational level had not yet been officially christened as such. The late 19th century battlefields had expanded to cover almost nine times the ground of the major battles in the Napoleonic period. By Mukden (1905) the battlefield would expand even further, covering one hundred times the size of the Austerlitz (1805) field. The First World War saw further expansion. Military officers recognized that something distinct was emerging between strategy and tactics, an groped at it through variations such as "grand tactics", "division strategy", and other imprecise terms that were further complicated by awkward translations. Christopher Bellamy, *The Evolution of Modern Land Warfare: Theory and Practice* (Routledge 1990) pages 62-64.

operational art were applied uncritically to the other levels of war, strategy and tactics⁷⁰⁷. A single envelopment attack against an army is very different from a single envelopment conducted strategically against the armed forces of a country, as what we know as the Schlieffen Plan envisioned⁷⁰⁸, and both of these scenarios are different from flanking a infantry battalion holding a position. Yet, on all three levels envelopment, not breakthrough, was seen as the preferred solution⁷⁰⁹. The mechanics of tactics were also of ancillary concern to Schlieffen, other than disciplined soldiers flanking their objective. Well drilled soldiers were necessary to execute the maneuvers he envisioned, but he had remarkably little to say about the tactical system. What he did comment on, through his focus on discipline and drill, deprived tactical commanders of flexibility and initiative. The vaunted *auftragstaktik* which commentators noticed emerging during the end of the First World War was not a

⁷⁰⁷ Gudmundsson argues that the German army at this time treated tactics as a “subsidiary art”, Bruce I. Gudmundsson, *Stormtroop Tactics: Innovation in the German Army 1914-1918* (Praeger 1989) page 13.

⁷⁰⁸ There is an ongoing controversy over whether there even was a Schlieffen plan, and if it existed how serious was it as an actual war plan versus a conceptual heuristic. On the debate see Terence Zuber, *Inventing the Schlieffen Plan: German War Planning 1871-1914* (Oxford University Press, 2002); Terence M Holmes “Classical Blitzkrieg: The Untimely Modernity of Schlieffen’s Cannae Programme,” *Journal of Military History* 67:3 (July 2003), pages 745-771; “One Throw of the Gambler’s Dice’: A Comment on Holger Herwig’s View of the Schlieffen Plan,” *The Journal of Military History* 67:2 (July 2003), 513-516; and Holger H. Herwig “Germany and the ‘Short-War’ Illusion: Toward a New Interpretation?” *The Journal of Military History* 66:3 (July 2002), pages 681-693. Yet this controversy is only tangentially related to the argument here, which concerns Schlieffen’s military concepts and the influence of these concepts on the thinking and learning of German officers in the wake of the Russo-Japanese War.

⁷⁰⁹ For tactical envelopment see, for example, Colonel Otto Griepenkerl, *Letters in Applied Tactics: Twenty Four Tactical Exercises Dealing with the Operations of Small Detached Forces of the Three Arms* authorized translation by Karl von Donat, (Hugh Rees, 1907), pages 234-239.

hallmark of German tactics in Schlieffen's time⁷¹⁰. Wrote Colonel (later Lieutenant General) William Balck⁷¹¹ in a tactical manual,

for enthusiasm, we would substitute faithful, unselfish performance of duty, and unquestioning subordination of the will of the individual to that of the leader. To be sure, on days of success enthusiasm will suffice, yet not when everything around us begins to waver and to yield. The importance of drill, which cannot be replaced by anything else, does not become apparent until all enthusiasm disappears, until the leader becomes conscious of the specter of panic which stalks by the side of enthusiasm⁷¹².

In many ways the German approach to tactics was more reflective of their concern for maintaining effective command and control under fire rather than overcoming the lethal effects of fire⁷¹³.

⁷¹⁰ On the emergence of *auftragstaktik* see Timothy Lupfer, *The Dynamics of Doctrine: The Change in German Tactical Doctrine During the First World War* (Leavenworth Paper 4, US Government Printing Office, 1981). On the contemporary status of the debate between *auftragstaktik* and the closer less flexible formations see Colonel William Balck, *Tactics* revised edition (original 1908, translated by Lieutenant Walter Krueger, US Cavalry Association printing, 1915), volume 1, pages 401-407

⁷¹¹ William was the father of General Hermann Balck, who, somewhat ironically, became one of the best field commanders for the German Army in World War Two through the use of *auftragstaktik*. In an interview in 1979, when asked about the keys to military success, the younger Balck noted "first and foremost, never follow a rigid scheme. Every situation is different –no two are the same... I'm against the school approach that says, 'in accordance with the ideas of the General Staff, in this situation you must do thus and such.' On the contrary, you must proceed as dictated by the personalities involved and the particulars of the situation... Therefore, one of the first principles has to be: there can be no fixed schemes. Every scheme, every pattern is wrong. No two situations are identical. This is why the study of military history can be extremely dangerous", from "Translation of Taped Conversation with General Hermann Balck, 13 April 1979," Battelle- Columbus Laboratories Tactical Technology Center (July 1979) (unclassified).

⁷¹² Colonel William Balck, *Tactics* revised edition (original 1908, translated by Lieutenant Walter Krueger, US Cavalry Association printing, 1915), volume 1, page 107

⁷¹³ Martin Samuels, *Command or Control? Command, Training, and Tactics in the British and German Armies: 1888-1918* (Frank Cass, 1995) pages 75-76. Robert Citino, "Beyond Fire and Movement: Command, Control, and Information in the German Blitzkrieg," in Emily O Goldman (editor) *Information and Revolutions in Military Affairs* (Routledge, 2005) pages 130-150

The second characteristic of Schlieffen's system was what might be termed an obsession over the battle of Cannae, in which Hannibal destroyed a much larger Roman army. This two thousand year old battle was an inspiration to Schlieffen, and represented to him the perfect battle⁷¹⁴. He himself wrote a book on Cannae, and he directed the General Staff to conduct further detailed studies⁷¹⁵. Schlieffen's interpretation of the two thousand year old battle of Cannae, an interpretation which was itself questionable, dominated the German General Staff approach to strategy, operations, and tactics at the turn of the century⁷¹⁶. Yet Cannae "permeated Schlieffen's entire official and unofficial writings. In developing this point, Schlieffen did what many critics have done in literature and other fields in attributing intentions to the artist which were perhaps not there originally"⁷¹⁷.

The effects of the inflexibility of Schlieffen's approach and leadership were doubly pernicious when projected within the General Staff system. First, the rest of the military was driven to think in terms of the application of rigid, formulaic, rule sets to military problems of strategy and operations, while generally avoiding specific tactical theory except as far as it

⁷¹⁴ Terence M Holmes, "Classical Blitzkrieg: The Untimely Modernity of Schlieffen's Cannae Programme," *Journal of Military History* 67:3 (July 2003), pages 745-771

⁷¹⁵ General Fieldmarshal Count Alfred von Schlieffen, *Cannae* (two volumes, authorized translation, US Government Printing Office, 1931).

⁷¹⁶ Jehuda L. Wallach, *The Dogma of the Battle of Annihilation: The Theories of Clausewitz and Schlieffen and Their Impact on the German Conduct of Two World Wars* (Greenwood Press, 1986). Wallach argues that Schlieffen was mistaken in some of the tactical details and seemed oblivious to the fact that despite Hannibal's success, Carthage lost the war due to Roman superiority in sea power and the invasion of Carthaginian provinces. See Wallach *Dogma of the Battle of Annihilation*, (ibid) pages 43-44.

⁷¹⁷ Christopher Bellamy, *The Evolution of Modern Land Warfare: Theory and Practice* (Routledge 1990) page 64.

bore on questions of operations⁷¹⁸. Second, the inflexibility caused Schlieffen and his supporters to truncate debate among the leadership, often ending the careers of those who challenged the formula. Rigid rules and stifled debate, created what one respected analyst has termed a “dogma” within the General Staff⁷¹⁹. Those who dissented, such as Bernhardt and Schlichting, were sidelined⁷²⁰. When prodded to consider models other than Cannae envelopment, Schlieffen wrote “well, it might be boring; it always revolves around the stupid being Victory”⁷²¹.

German Views on the Russo-Japanese War

The German literature is unique in that it was mostly the product of General Staff professionals. The *Official Account* was a General Staff product, as would be expected, but so too was the analysis provided by Balck, von Caemmerer, and Freytag-Loringhoven⁷²². The

⁷¹⁸ On tactical stagnation Steven D. Jackman, “Shoulder to Shoulder: Close Control and ‘Old Prussian Drill’ in German Offensive Infantry Tactics, 1871-1914,” *The Journal of Military History* 68:1 (January 2004), pages 73-104, and Eric Dorn Brose *The Kaiser’s Army: The Politics of Military Technology in Germany During the Machine Age- 1870-1918* (Oxford University Press, 2001) pages 86-101.

⁷¹⁹ Jehuda L. Wallach, *The Dogma of the Battle of Annihilation: The Theories of Clausewitz and Schlieffen and Their Impact on the German Conduct of Two World Wars* (Greenwood Press, 1986).

⁷²⁰ Daniel J. Hughes, “Schlichting, Schlieffen, and the Prussian Theory of War in 1914,” *The Journal of Military History* 59:2 (April 1995) pages 257-277. Bernhardt argued in favor of cavalry and morale within the context of a breakthrough operation, while Schlichting argued for revamping infantry tactics by adopting an approach based on *auftragstaktik*. While both were very different, and agreed on little (including in their interpretation of the Russo-Japanese War) they published analysis critical of Schlieffen’s approach. Schlieffen’s doctrinaire approach to military theory and history also attracted the criticism of the noted civilian historian, Hans Delbrück. Gordon A. Craig, “Delbrück: The Military Historian,” in Peter Paret (ed), *Makers of Modern Strategy Second Edition* (Princeton University Press 1986) pages 326-353; Azar Gat, *The Development of Military Thought: The Nineteenth Century* (Oxford University Press, 1992, reprinted 2000).

⁷²¹ Jehuda L. Wallach, *The Dogma of the Battle of Annihilation: The Theories of Clausewitz and Schlieffen and Their Impact on the German Conduct of Two World Wars* (Greenwood Press, 1986) page 37.

⁷²² Antulio J. Echevarria II, “German General Staff Historian Hugo Friche von Freytag-Loringhoven and the Dialectics of German Military Thought,” *The Journal of Military History* 60:3 (July 1996) pages 471-494.

German *Official Account* and subsequent professional analysis by German commentators reflected Schlieffen's concepts. Those analysts who dissented from Schlieffen's broader concepts, such as Schlichting and Bernhardt, also dissented from the narrative and lessons of the war as relayed in the *Official Account*.

The most striking thing about reading the *Official Account* is that within its nine volumes (including the Mukden supplement and the Sha-ho map volume) there is almost no discussion of either the strategy or the tactics of the war. The whole history is written about operations, and all of the conclusions drawn within the volumes are operational conclusions. There is a brief discussion of Russian tactics in the first volume, which outlined Russian regulations and noted "no stress was laid upon the necessity of using the last man at the decisive moment... The conviction that it was necessary to direct the attack simultaneously against flank and front was also absent"⁷²³. The discussion of Japanese tactics was equally brief, and noted their adherence to the 1888 German field regulations. Throughout the narrative there is no discussion of the adjustment of these tactics, nor of the specific strengths and weaknesses of each system.

As an example, in his discussion of the lessons of the Battle of Mukden, Lieutenant-General Rudolf von Caemmerer notes that once the Japanese Army was positioned to envelop Kuropatkin, Russia was already operationally defeated, even before the battle was fought. In the following lengthy passage, quoted in its entirety, the intense operational focus, with the repeated allusion to envelopment and reserves, comes through very strongly:

⁷²³ German General Staff (Historical Section), *The Yalu* [sic] Lieutenant Karl von Donat (editor and authorized translator) (Hugh Rees, 1913) page 62.

When the Third Japanese Army began its difficult turning movement on 27 February, the reserve of the Russian wing –placed as it was *behind* [emphasis original] that wing –had already started for the extreme east; any serious resistance against an enveloping movement was therefore completely out of the question, and the whole dispositions of the Russian right wing were bound to collapse like a house of cards. By marching more than 90 kilometers (56 miles) in four days the Japanese extreme left wing arrived within the neighborhood of the entrenchments which were designed to protect Mukden in the west, and where a new Corps of the enemy was now hurriedly collecting.

At that moment, however, it became clearly apparent that the Japanese Commander-in-Chief had committed a grievous mistake: *while the enveloping Third Army was deployed with all its forces in a long line on the 2. and 3. March without being able to outflank the hastily improvised new front of the Russians, there was standing behind the Fourth Army in the centre of the whole line of battle a General Reserve of the Army, 2 ½ Divisions, in complete idleness and unable to throw its weight into the scale* [emphasis original]. If the Russians had now succeeded in throwing a somewhat adequate force upon the flank of the Third Army, the operation so successfully initiated would have utterly failed at the last moment. We shall see later on that this was perfectly possible, and that only tactical clumsiness of the Russians missed the opportunity⁷²⁴

This account of the Battle of Mukden does, at least, use the word “entrenchments” (once), but it does not deal with any of the tactical issues of the battle, such as the effects of these entrenchments, artillery employment, combined arms assault, tightness and depth of infantry formations, employment of machineguns, ammunition consumption, and so forth. Instead the complex maneuver of armies around Mukden, respectively focusing on enveloping the flank of the other while retaining the ability to deploy the reserves at the decisive moment, is the overriding impression left by the passage. It should be emphasized that this is not just a narrative of field operations in the middle of the account, but is instead von Caemmerer’s *distillation of the essence* of the largest, bloodiest, and final, battle of the Russo-Japanese War.

⁷²⁴ Lieutenant-General Rudolf von Caemmerer, “Comments on the Battle of Mukden,” in Lieutenant Karl von Donat (editor and authorized translator) *The Battle of Mukden* supplement to the *Military History of the Russo-Japanese War* (Hugh Rees, 1906) page 60-61.

What is singled out as “tactical clumsiness” is the failure of Kuropatkin to attack the flank of the Japanese Third Army, and what would now be termed “operational clumsiness”.

Tactics are consistently ignored by the German reports and comments. Aside from Balck’s specifically focused tactical piece, which predated the Russo-Japanese War, but which he updated in 1908 to include a discussion of the events in Manchuria and South Africa, most published works examining the Russo-Japanese War didn’t have much to say about the emerging tactical issues of combined arms, assault tactics, machine guns, and artillery targeting. Instead the discussion of tactical issues took place among a specialized subset of publications, and the history and lessons of the war, codified in the *Official Account*, were focused on operations.

This is in sharp contrast to the British and American accounts, which discussed issues of tactics in great detail. The observers discussed tactical issues, tactical lessons made up a large part of the official histories, and the commentators who wrote for a military audience discussed tactical issues and lessons.

The tactical lessons that were sketchily drawn within the *Official Account* and other German sources differed from those drawn elsewhere. Summarizing the finding on rates of tactical infantry advance and Japanese adherence to the tactical system (originally presented in chart 3 – 4), and sorting the results by the country of origin shows German divergence from the others.

Chart 6 – 2: Summary of Infantry Tactics Findings

		Country of Commentator Origin				
		Germany	France	UK	USA	Total
Rates of Infantry Advance	About Right	0	0	9	4	13
	Too Slow	5	2	1	3	11
	No Position	3	0	10	1	14
Successful Japanese Tactics	German System	7	0	2	0	9
	Adjusted	0	1	12	4	17
	No Position	1	1	6	4	12

While tactics gets such short shrift, strategy fares even worse. Despite Clausewitz' sensitivity to the relationship between military force and political objectives, there is very little discussion of the political aspects of the Russo-Japanese War within the *Official Account*⁷²⁵. There is no clear discussion of the manner in which the distinct operations tied together into a coherent (or incoherent) strategy for achieving political objectives. The discussion of political strategy is largely one of prewar logistics, dealing with the training, equipping, and war planning of the Japanese military and civil leadership.

While the Germans noted Japanese naval developments, they regarded them as a problem for coastal military operations, but not as a decisive element themselves. Describing the Russian dilemma at Nan-shan, the history notes that the Russians were confronted

one the one side, where the 1st Japanese Army was known to be, and, on the other side, by the Gulf of Liao-tung, commanded by the Japanese Fleet, whence the danger of further landings was constantly threatening. It becomes evident here how greatly operations on land near the coast depend for success on command of the sea⁷²⁶.

⁷²⁵ This is in stark contrast to the British *Official History*.

⁷²⁶ German General Staff (Historical Section), *Wa-Fan-Gou and Actions Preliminary to Liao Yan* [sic] Lieutenant Karl von Donat (editor and authorized translator) (Hugh Rees, 1913) page 247.

While the Germans sent naval observers, those observers did not publish a history, nor did they apparently have much to say in the *Official Account*⁷²⁷. Their records remain a collection of individual documents within German archives, and fairly disconnected with the balance of the contemporary professional comment on the Russo-Japanese War⁷²⁸. The broader maritime issues involved in the campaign for Port Arthur were largely overlooked in the *Official Account*⁷²⁹. Indeed, Port Arthur was dealt with in passing within the larger volumes, and was not given its own volume.

Even this formulation of the naval influence on warfare was largely about military envelopment. The threat posed by the Japanese fleet was the ability to land along the coast of the Liao-tung at will, and conduct the envelopment of Russian military units operating along the coast. The threat was that the Japanese would use the navy to flank from the sea. Moreover, at Nan-shan, the enfilade fire provided by *Bobr* before she withdrew was noted as a contribution to the Russian defense, and the subsequent arrival of the Japanese gunboat force to provide their enfilade fire was seen as the turning point of Nan-shan.

The economic considerations, which were so prominent in the accounts of the British and Americans, are almost wholly absent. There is no discussion of the rebellions and mutiny

⁷²⁷ There is no record of or reference to an official account of naval operations, either in German or in English. The lead observer's diaries have only recently been published, and cover nineteen years of naval events. Michael Epkenhans (edited) *Albert Hopman: Das Ereignisreiche Leben Eines Wilhelminers' Tagebücher, Briefe, Aufzeichnungen 1901 bis 1920* (Oldenbourg Verlag, 2004). This document awaits an English translation. Keith Bird, "The Tirpitz Legacy: The Political Ideology of German Sea Power," *The Journal of Military History* 69:3 (July 2005) pages 821-26.

⁷²⁸ Cord Eberspaecher, "The Road to Jutland? The War and the Imperial German Navy," in Rotem Kowner (editor) *The Impact of the Russo-Japanese War* (Routledge 2006).

⁷²⁹ The contrast with the British and American accounts is striking. Please see the discussion in this in this chapter.

back in Russia, there is no comment about the near bankruptcy of Japan and there is certainly no separate section devoted to fluctuations in the rate of interest paid on sovereign debt. The strategy discussion is early in the first volume, noting the Japanese objective of expelling Russia from Korea and Port Arthur, and reducing Russian influence in Manchuria⁷³⁰. The rest is operations.

On the operational level the German *Official Account* served to clearly stress the principles laid down by Schlieffen, with the emphasis on envelopment. The single envelopment was inferior to the double, and only to be used in cases where the attacker lacked sufficient force.

In discussing Japanese preparations for Mukden the *Official Account* notes that the

most effective way of bringing about the enemy's destruction, which was to envelop him strongly on both wings, was, however, not likely to be achieved. The forces available were not strong enough for that. The Marshall [Oyama] decided therefore to strike hardest on his left, while the right was charged with the task of drawing upon itself as many forces of the enemy as possible by an early attack⁷³¹

The theme of envelopment recurs throughout the German study, where the belligerents are criticized for both linear attack and passive defense⁷³².

Especially sharp comment on the Russians was reserved for the Liao-yang volume of the *Official Account*, where Kuropatkin's behavior left the Germans baffled⁷³³. Despite the

⁷³⁰ German General Staff (Historical Section), *The Ya-Lu* Lieutenant Karl von Donat (editor and authorized translator) (Hugh Rees, 1913) pages 104-106.

⁷³¹ German General Staff (Historical Section), *Between San De Pu and Mukden* Lieutenant Karl von Donat (editor and authorized translator) (Hugh Rees, 1913) page 120.

⁷³² See, for example, German General Staff (Historical Section), *The Ya-Lu* Lieutenant Karl von Donat (editor and authorized translator) (Hugh Rees, 1913) pages 61-62.

⁷³³ In defense of Kuropatkin, whose conduct may seem inexplicable to the reader, his situation should be considered. Orlov's reserve division had been badly cut up and retreated in a panic.

opportunity offered by Kuroki's premature river crossing, the Russian "available reserves were not engaged in acting offensively in a uniform manner against the enemy's flanks, but were scattered about, and frittered away in dribbles"⁷³⁴. In their analysis of Kuropatkin's desire to retreat along the secure railroad back to Mukden, rather than to counterattack the Japanese, the Germans criticized him for his inability to adopt a plan for an envelopment, rather than for a simple frontal attack⁷³⁵. At the same time, the Germans praise Kuroki's decision to commit his entire reserve, even though they note his error in crossing the river early⁷³⁶. The *Official Account* also criticizes the Japanese for wasting too much effort on frontal attacks and not bringing the flank attack at a deep enough angle. Having taken

Kuropatkin knew that all of his units had been hard pressed, and he was unsure of the losses that they had themselves inflicted. He knew that the Japanese had made a series of fierce attacks, he knew that his units had held their ground while accepting casualties, and then the word of Orlov's defeat came into headquarters. Rather than waiting to see if the situation was as bad as Orlov's initial reports had made it sound, and rather than waiting to see if it was just a local defeat for Orlov or part of a renewed general Japanese offensive, Kuropatkin chose to order an immediate withdrawal. Only after positions were abandoned did he discover that the defeat of Orlov was not part of a broader Japanese attack, and that his defensive units were still largely intact. To put it baldly, Kuropatkin was panicked by the initial (exaggerated) reports about the fate of Orlov's division and acted on that panic. In their discussion of willpower the German study makes it clear that willpower is important precisely because situations of incomplete, exaggerated, and outright false information are *inevitable* at Headquarters during a battle (the fog of war). A strong willed commander will let the plan proceed, whereas a weak willed commander will make defensive decisions based on this early, but erroneous, data. It should be noted that the same situation occurred after the battle of Gumbinnen in 1914 with General von Prittwitz, and was alleged to have been what happened to Moltke the Younger in some accounts of 1914, though the Moltke event remains a matter of considerable debate. Colonel Charles Ross, *An Outline of the Russo-Japanese War 1904-1905* (MacMillan and Company, 1912); Hew Strachen, *The First World War Volume I: To Arms* (Oxford University Press, 2003); Baron Hugo Friedrich Philipp Johann Freiherr von Freytag-Loringhoven, *The Power of Personality in War* (originally 1911, translated by Oliver L Spaulding 1938, reprinted in *Roots of Strategy Book 3: Three Military Classics*, Stackpole Books, 1991); Jehuda L. Wallach, *The Dogma of the Battle of Annihilation: The Theories of Clausewitz and Schlieffen and Their Impact on the German Conduct of Two World Wars* (Greenwood Press, 1986).

⁷³⁴ German General Staff (Historical Section), *Liao-Yan* [sic] Lieutenant Karl von Donat (editor and authorized translator) (Hugh Rees, 1913) page 212.

⁷³⁵ German General Staff (Historical Section), *Liao-Yan* [sic] (op cit) page 214.

⁷³⁶ German General Staff (Historical Section), *Liao-Yan* [sic] (op cit) page 220.

Manju-yama, the Japanese could have proceeded north-north west, rather than west, and that, the Germans argue, would have cut Kuropatkin off, allowing for the destruction of the Russians, rather than allowing their escape along the Liao-yang-Mukden railway.

This discussion of Liao-yang gives way to the famous quotation that “the will to conquer, conquered”⁷³⁷. In this context the *Official Account* is clearly directing the comment on the failings of Kuropatkin to counter attack (or even hold his position) after the Japanese army had shot their bolt in frontal attacks around Liao-yang and the flank assault and Manju-yama⁷³⁸. The *Official Account*’s discussion of Liao-yang cites Schlieffen specifically in critiquing Kuropatkin’s sensitivity for the safety of his position. Quoting Schlieffen the history notes “that there is nothing which protects the lines of communication to the rear better than a victorious battle, which regulates everything and settles every question”⁷³⁹. The Germans were not criticizing the “will to conquer” among the lower ranks, but specifically and directly the character failing of Kuropatkin.

Along with envelopment the German study stresses using inferior forces to lure the enemy forward before delivering flanking blow, compounding the effects of envelopment. At

⁷³⁷ German General Staff (Historical Section), *Liao-Yan* [sic] (op cit) page 220.

⁷³⁸ This quotation is often used as evidence of the *Official Account* exhorting close order offensive tactics in the face of modern firepower, as in, for example Gary P. Cox, “Of Aphorisms, Lessons, and Paradigms: Comparing the British and German Official Histories of the Russo-Japanese War,” *The Journal of Military History* 56:3 (July 1992), page 397. As we have already noted the *Official Account* is mostly silent on matters of tactics, and this is a repetition of Schlieffen’s concept that Generals must remain constantly on the offensive or risk the locking up of the front.

⁷³⁹ German General Staff (Historical Section), *Liao-Yan* [sic] Lieutenant Karl von Donat (editor and authorized translator) (Hugh Rees, 1913) page 212. Schlieffen quotation attributed to: “Viertel-Jahres-Hefte für Truppen-Führung und Heeres-Kunde,” (1907), vol ii Der Feldzug von Preussich Eylau von General Oberst Graf v. Schlieffen. The translation of Schlieffen is embedded with the text, and is presumably von Donat’s own.

Mukden, Marshal Oyama is singled out for criticism because he does not fully commit to the envelopment for decisive effect.

[H]e was wanting in boldness when he did not make his centre as weak as possible, and when he did not apportion the General Reserve of the Army from the outset to the wing where decision was sought for. If *he* had been bold enough to venture this as well, *victory would have been his a whole week sooner and with much more decisive results* [emphasis original]⁷⁴⁰.

Again on Mukden, Caemmerer makes the same point for the Russians, noting with respect to a hypothetical counter offensive that “the offensive would have been even considerably facilitated if the Japanese were induced to advance their western wing as many kilometers as the Russians drew back their own. What was really wanted in an attack was the assurance of an effective envelopment”⁷⁴¹.

The influence of Schlieffen’s concepts on the Germans and the Japanese was even noted by the observers. Captain Judson, of the US Army Corps of Engineers, was observing Russian activity prior to Mukden with a German observer. Together they concluded that “too great proportions of infantry were kept in reserve, and far too great proportions of artillery. The senior German attaché wisely remarked that the true reserves for the artillery are the ammunition columns”⁷⁴². British Lieutenant Colonel Kearsey noted the influence of German thinking, and Schlieffen in particular. “The Japanese believed that envelopment on

⁷⁴⁰ Lieutenant-General Rudolf von Caemmerer, “Comments on the Battle of Mukden,” in Lieutenant Karl von Donat (editor and authorized translator) *The Battle of Mukden* supplement to the *Military History of the Russo-Japanese War* (Hugh Rees, 1906) pages 62.

⁷⁴¹ Lieutenant-General Rudolf von Caemmerer, “Comments on the Battle of Mukden,” in Lieutenant Karl von Donat (editor and authorized translator) *The Battle of Mukden* supplement to the *Military History of the Russo-Japanese War* (Hugh Rees, 1906) page 67.

⁷⁴² William V. Judson report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in Manchuria During the Russo Japanese War* (volume 3) (US Government Printing Office, 1907) page 165.

all occasions was the sure road to victory. Their model apparently was the Battle of Cannae, where Hannibal, with an army of fifty thousand, annihilated a Roman army under Varro of seventy thousand. At Cannae the simplest form of double envelopment was practiced⁷⁴³.

Views on Reserve Fractions

In his critique of Kurpotakin's conduct at the Sha-ho, Balck argues "the reserves are created to be used; every available man must participate in the decisive stage of the combat. If the enemy yields before the reserve is launched, so much the better; if he does not give way, all the troops that are at hand must be put in. The main thing is to gain the victory; scruples may be indulged in afterwards"⁷⁴⁴. As already demonstrated above, a key component of Schlieffen's concept was this concentrated use of all reserves in an effort to achieve a decisive event. Yet the use of reserves early and completely is not without risk. In his examination of military history, Stephen Biddle makes the point that committing reserves incorrectly or in incorrect amounts, can risk the attack⁷⁴⁵. While the official German literature was unanimous in support of this sort of reserve policy, it is instructive to look at how other observed the issue, as that may provide insight into whether this position was uniquely a product of Schlieffen's General Staff or was more widely held by the observer community in the wake of the Russo-Japanese War.

⁷⁴³ Alexander H. C. Kearsley, *A Study of the Strategy and Tactics of the Russo-Japanese War 1904 Illustrating the Principles of War and the Field Service Regulations* (Gale & Polden 1935?) page 90.

⁷⁴⁴ Colonel William Balck, *Tactics* revised edition (original 1908, translated by Lieutenant Walter Krueger, US Cavalry Association printing, 1915), volume 1, page 396.

⁷⁴⁵ Stephen D. Biddle, *Military Power: Explaining Victory and Defeat in Modern Battle* (Princeton University Press, 2004) pages 220-223. Biddle's model, however, is specific to breakthrough under the rules of the modern system. Schlieffen was opposed to breakthrough operations, and instead focused on envelopment, so to some extent the data cannot be directly translated to 1904-1905, at least according to the rules which Schlieffen was using.

The superiority of envelopment was not a unanimous verdict, and many of the commentators were sensitive to the risk. Major Bird, in his analysis of the lessons of the Russo-Japanese War, stressed that despite the success of the Japanese, “there is no magic, calculated to ensure success, in enveloping strategy... Envelopment, if successful, is decisive, a fact which tempts commanders to run the risks its inception entails”⁷⁴⁶. The British *Official History (Naval and Military)* was equally critical. “If courage and self sacrifice alone were sufficient to compel victory success would surely have crowned these splendid efforts; but the Japanese had yet to learn that, in the face of determined enemy to neglect the precautions inculcated on the training ground is to court disaster”⁷⁴⁷.

Commenting on Liao-Yang Burne closes his account with concern for the risks run by Kuroki, even if the Russians inexplicably failed to exploit those risks. “But for faults in execution, the Russians would have brought off a decisive attack by the method of interior lines. The Japanese also overlooked that the strategy of exterior lines [envelopment] requires a numerical superiority to be effective, which they had not got”⁷⁴⁸. This passage not only illustrates a concern for the risks of envelopment, but refutes one of the basic elements of Schlieffen’s argument, and that is that envelopment can be effectively used by the numerically *weaker* side to beat a stronger adversary.

⁷⁴⁶ Brevet-Major W D Bird, *Lectures on the Strategy of the Russo-Japanese War* (Hugh Rees, 1911), page 67.

⁷⁴⁷ Great Britain Committee of the Imperial Defence (Historical Section) *Official History (Naval and Military) of the Russo-Japanese War Volume 2: Liao-Yang, the Sha Ho, Port Arthur* (His Majesty’s Stationary Office 1912) page 192.

Conclusion: Schlieffen's Theory of War and the Lessons of the Russo-Japanese War

The differences between the German accounts of the Russo-Japanese War and other accounts can be largely explained by examining the shared ideas propagated by the Chief of the German General Staff, von Schlieffen, and his supporters in the German Army. These shared ideas included the cognitive anchor of the envelopment battle; idealized as Schlieffen's conception of Cannae, the notion of vigorous offensive spirit on the part of the commander coupled with discipline, rather than spirit, at lower levels; and the almost exclusive focus on operational level issues, to the neglect of tactics and strategy.

Schlieffen stressed envelopment, double if possible, single if necessary, at all levels of combat. The German observations duly noted and emphasized the envelopment at Nanshan, the envelopment at Liao-yang, the incomplete envelopment at Mukden (leading to incomplete victory), the failure to envelop at San-de-pu, Wa-fang-gou, and at the Sha-ho, and the failure of all three of those offensives.

Schlieffen's approach neglected tactics, only touching on the notion of centralized command at the operational level which was directly applied to centralized command at tactical levels, thus requiring close order formations and little tactical flexibility. This allowed the Germans to note, briskly, and in accordance with the confirmation bias, that the Japanese complied with 1888 German field relations, while all other observers noticed either a gradual or marked loosening of formations and delegation of tactical command authority in the Japanese units that were most successful.

⁷⁴⁸ Lieutenant-Colonel A H Burne, *The Liao-Yang Campaign* (William Clowes, 1936) page 124.

Schlieffen neglected siege, as did the German accounts. Port Arthur was a minor part of the narrative, covered in passing in volumes which were titled, and focused, on envelopment operations. It was an aberration in that it was not the kind of operation Schlieffen foresaw, and thus it was not worth a detailed study. The implications, many of which were tactical, were thus doubly deëmphasized. He also neglected broader strategic issues, and thus, as already noted, the German accounts hardly touched on the political objectives and broader strategic issues of the war. Naval operations were important only insofar as they allowed sea-based envelopment, as was threatened at the Liao-tung; or sea-based enfilade fire, as was provided at Nan-shan.

Schlieffen also stressed early and complete commitment of reserves in order to force a decisive moment. The Japanese, trained according to German regulation, followed this precept. I suggested that adherence to this principle might be a valuable follow on test to see if those who shared this cultural-cognitive framework really perceived things differently. As the theory predicts, the record shows that the German accounts and official publications did emphasize the importance of early and complete commitment of the reserve. More importantly, observers from the US and Britain were very cautious about this point. While they noted that envelopment could indeed deliver decisive victory, they also pointed out the risks of such an approach, and emphasized how Kuroki's early river crossing jeopardized the entire Japanese plan at Liao-yang. The ability to explain this additional result by application of the theory adds more evidence.

The application of Schlieffen's theories also explains why the German *Official Account*, and subsequent commentary, came to regard Liao-yang as the decisive battle of the war, while

other commentators argued that it was a draw, or at best a costly but minor Japanese victory. The Germans saw an operational level envelopment and commitment of reserves, and saw a success, attributing the Russian escape to an insufficiently wide Japanese flanking movement north from Manju-yama and a reluctance on the part of the Japanese to denude their holding force in front of the Liao-yang position in order to strengthen the enveloping wing. All other commentators saw high casualties, an indecisive outcome, and the tremendous risks run by the Kuroki, who escaped destruction only because of Russian error.

I have now covered differences in military strategy, operations, and tactics. The next part of this analysis focused strictly on the naval issues raised by the Russo-Japanese War, specifically the observations and comments made about capital ship design issues and naval tactics.

The Conduct of Naval Warfare

In the preceding section we examined the role of culturally shared ideas in the analysis of military strategy, operations, and tactics. In this portion we will follow the same approach for an understanding of naval warfare. In the first section I will argue that there were two distinct ideationally defined groups with radically different concepts of naval warfare, from which flowed radically different design plans. The first, grouped around Alfred Thayer Mahan, focused on volume of fire to disrupt the crews and officers of enemy vessels. The second, most clearly associated with Admiral Sir John Fisher, focused on using heavy guns to sink the enemy at long ranges. These groups had their adherents on both sides of the Atlantic, and both paid attention to the Russo-Japanese War. With group identity shifted to

ideationally defined groups, I argue, in the second section, that the performance of recast cognitive hypotheses radically improves, and just as importantly, explains the divergence in views about naval warfare upon which the Bayesian approach ran aground.

Ideas of Naval Warfare

The divergence of observations on naval warfare is striking because it represents such a clear pattern. There were essentially only two positions taken by observers. Mahan, Custance, and McCully were in agreement; Pakenham, Corbett, Sims, Jackson, and the British *Official History (Naval and Military)* were in near agreement, with Corbett not (in this document) taking a position on armament and Pakenham and the Official History fudging the range issue by noting that both long and short could be effective⁷⁴⁹. The opinions on range, speed, armament, and size of battleships all tended to be linked. This linkage cannot be explained by a Bayesian model, it cannot be explained by material interest, and it cannot be explained by the more universal cognitive heuristics. It can, however, be explained by the two rival concepts of capital ship design that flourished before the First World War, namely the Fisher school and the Mahan⁷⁵⁰ school, or more generally, those who used a Material approach and those who used a Historical approach to naval warfare⁷⁵¹.

⁷⁴⁹ While his history of the Russo-Japanese War would not take a firm stance on the question of armament, Corbett would be drawn into the debate and come down firmly in support of Fisher on the gunnery and speed questions. Jon Tetsuro Sumida, "The Historian as Contemporary Analyst: Sir Julian Corbett and Admiral Sir John Fisher," in James Goldrick and John B. Hattendorf (editors) *Mahan is Not Enough: Proceedings of a Conference on the Works of Sir Julian Corbett and Admiral Sir Herbert Richmond* (Naval War College Press / Diane Publishing, 1993) pages 125-140.

⁷⁵⁰ Mahan's leadership of this grouping seems to be coincident with, rather than a result of, his prominence in notions of seapower and strategy. Mahan had never commented on issues of modern ship design until he felt compelled to respond to what he felt were unhealthy trends. When he was confronted with a barrage of criticism (detailed below) and the results of classified experiments by the British after the Russo-Japanese War, he eventually retreated, in a letter to Roosevelt, noting his

The ideas which informed naval warfare prior to the First World War were, in many ways, part of what we would today refer to as an international epistemic community⁷⁵². Fisher, Mahan, and their partisans in multiple countries read each other's journals, engaged in public and private discourse, and watched developments within each other's navies carefully⁷⁵³. Members of the community actually made or at least advised on policy for their respective navies and governments. Records indicate that the debate among the two schools of naval architecture on both sides of the Atlantic was closely linked⁷⁵⁴. As already noted, Mahan

limited expertise with matters of modern gunnery. Captain Alfred Thayer Mahan, letter to Theodore Roosevelt, 22 October 1906, reproduced in *Letters and Papers of Alfred Thayer Mahan, Volume III: 1902-1914*, edited by Robert Seager III and Doris D. Maguire (US Naval Institute Press, 1975) pages 185-189. It is perhaps not surprising that a man of Mahan's skills and interests would be involved in more than one major naval policy debate of his times. Indeed, even his critics on the capital ship issue suggested that Mahan was out of his admittedly broad area of expertise when not discussing the broader strategy of seapower. Sir Julian S. Corbett, "Review of Alfred Thayer Mahan Types of Naval Officers Drawn from the History of the British Navy", *American Historical Review* 7:3 (April 1902) pages 556-559

⁷⁵¹ The distinction was framed by Admiral Sir Reginald Custance (under the pseudonym "Barfleur") *Naval Policy: A Plea for the Study of War* (William Blackwood & Sons, 1907) page 113, but has continued on as a point of discussion for general naval strategy of that period. See Geoffrey Till "Corbett and the Emergence of a British School?", in Geoffrey Till (editor) *The Development of British Naval Thinking: Essays in Memory of Bryan Ranft* (Routledge, 2006) pages 60-88, especially pages 66-67; and Colin S. Gray "Sea Power in Modern Strategy," in David Stevens and John Reeve (editors) *Southern Trident: Strategy, History, and the Rise of Australian Naval Power* (Allen & Unwin, 2001) pages 24-39.

⁷⁵² Peter M. Haas, "Introduction: Epistemic Communities and International Policy Coordination" *International Organization* 46:1 (Winter 1992); Sarah E. Mendelson, "Internal Battles and External Wars: Politics, Learning, and the Soviet Withdrawal from Afghanistan," *World Politics* 45 (April 1993) pages 327-60

⁷⁵³ For example, Sir Archibald S. Hurd, a naval architect who would later edit Brassey's *Naval Annual*, discussed the debate between White and Mahan, on the one hand, and Sims and Fisher, on the other hand, with respect to the lessons of the Russo-Japanese War for naval architecture. See Hurd, "The World's Seventy Dreadnoughts," *Cassier's Engineering Monthly* 36:1 (May 1909) pages 6-11; Ernest Andrade, "The Battle Cruiser in the United States Navy," *Military Affairs* 44:1 (February 1980) pp 18-23

⁷⁵⁴ Jon Tetsuro Sumida, "The Historian as Contemporary Analyst: Sir Julian Corbett and Admiral Sir John Fisher," in James Goldrick and John B Hattendorf (editors) *Mahan is Not Enough: Proceedings of a*

forwarded Custance's Barfleur articles on the Russo-Japanese War to president Roosevelt with approving comments and identifying Custance as the author. Later Custance published work on Tsushima under his own name, and credited Mahan with many of the ideas⁷⁵⁵. Mahan and Sir William White coordinated their attacks against Fisher's speed and concentration concepts through professional engineering fora⁷⁵⁶. Sims' attack on Mahan's analysis of Tsushima, and Sims' own published analysis trumpeting the tactical advantage of speed brought private telegrams of congratulations from Fisher and was covered in Brassey's *Naval Annual*⁷⁵⁷.

The Material approach was one of, if not technological determinism, certainly technological emphasis. Stressing the advances in rangefinding, artillery, propulsion, hull design, and armor; Materialists argued that naval warfare was in the midst of a revolutionary change, and

Conference on the Works of Sir Julian Corbett and Admiral Sir Herbert Richmond (Naval War College Press / Diane Publishing, 1993) pages 125-140.

⁷⁵⁵ Captain Alfred Thayer Mahan, letter to Theodore Roosevelt, 8 October 1906, reproduced in *Letters and Papers of Alfred Thayer Mahan, Volume III: 1902-1914*, edited by Robert Seager III and Doris D Maguire (US Naval Institute Press, 1975) page 178; Custance, Admiral Sir Reginald *The Ship of the Line in Battle* (William Blackwood & Sons, 1912).

⁷⁵⁶ Archer Jones and Andrew J. Keogh. "The Dreadnought Revolution: Another Look," *Military Affairs* 48:3 (July 1985) page 127; Sir Archibald S Hurd, "The World's Seventy Dreadnoughts," *Cassier's Engineering Monthly* 36:1 (May 1909) pages 3-19; and no author "English Expert for Small Calibre Guns; Sir William White Favors 12-Inch Armament with a Battery of 6-Inch Weapons" *New York Times* 18 November 1910, page 6.

⁷⁵⁷ Editors comments, *Letters and Papers of Alfred Thayer Mahan, Volume III: 1902-1914*, edited by Robert Seager III and Doris D Maguire (US Naval Institute Press, 1975) page 178; Robert O'Connell *Sacred Vessels: The Cult of the Battleship and the Rise of the US Navy* (Westview Press, 1991), pages 113-116; John Leyland and Thomas Allnutt Brassey, "The Problem of Speed –Both Sides of the Question," in John Leyland and Thomas Allnutt Brassey (editors) *The Naval Annual, 1906* (J Griffin, 1906) pages 144-155.

required a revolutionary approach to capital ship design⁷⁵⁸. The Historical approach stressed the broad continuity of naval history from the days of sail, and drew lessons and analogies from this history. In a rebuttal to one of Custance's Barfleur pieces, Corbett acknowledged that Custance's narrative of the War of 1812 was well done, but that the "value of history is not only to set forth the experience of the past, but also to show when some radical change of fundamental conditions has made that experience dangerous precedent"⁷⁵⁹.

Fisher and his supporters in the Materialist approach argued that speed, achieved through turbine propulsion, was decisive, for it allowed the faster side to choose the timing, nature, and direction of the engagement⁷⁶⁰. Because speed was essential, the second part of the argument, that of ship size, followed. The advanced turbine propulsion plants needed to generate a speed advantage took up more room and consumed fuel at a greater rate, thus requiring bigger ships⁷⁶¹. The third part of the argument was that an armament consisting of

⁷⁵⁸ Jon Tetsuro Sumida, "British Capital Ship Design and Fire Control in the Dreadnought Era: Sir John Fisher, Arthur Hungerford Pollen, and the Battle Cruiser," *Journal of Modern History* 51:2 (June 1979) pages 205-230; as well as the epistemological discussions in the Gray and Till essays cited above.

⁷⁵⁹ Sir Julian Corbett, "Recent Attacks on the Admiralty," *The Nineteenth Century* 61 (February 1907), page 203, as cited in Sumida "The Historian as Contemporary Analyst," (1993, op cit) page 130.

⁷⁶⁰ Jon Tetsuro Sumida, "British Capital Ship Design and Fire Control in the Dreadnought Era: Sir John Fisher, Arthur Hungerford Pollen, and the Battle Cruiser," *Journal of Modern History* 51:2 (June 1979) pages 205-230. As specifically applied to the Russo-Japanese War see Oscar Parkes, *British Battleships: "Warrior" 1860 to "Vanguard" 1950 – A History of Design, Construction, and Armament* (Seeley Service & Co, Revised edition, 1966) pages 461-476.

⁷⁶¹ Prior to the advent of the Parsons turbine warships used triple-expansion engines. The turbine was itself smaller than the triple expansion engine, but while the older engines could be connected directly to the propeller shaft, the turbine needed complex gear boxes to convert the motion into something useful for propulsion. Furthermore, because of the power in the turbine it needs to be controlled by a governor, which regulates the change in turbine speed, in order to prevent catastrophic failure. All of this additional machinery dramatically increased the size requirements, cost, and complexity for fast capital ships. See anonymous, "A New Era for the Steam Engine,"

all big guns was essential, because only the big gun could wreck modern armor and destroy the enemy's ships⁷⁶². Furthermore, all big guns simplified the storage and distribution of ammunition within the ship, and simplified fire control by reducing spotting confusion. Next, the fourth aspect of the argument was an emphasis on long range gunnery, as the combination of speed and range enabled a ship to engage the enemy without risking return fire. This fourth aspect was a little wobbly, as Pakenham, Corbett, and the staff of the *British Official History (Naval and Military)* instead argued that speed allowed for a choice of ranges, and in some instances the faster side may choose to narrow the range for increased destructive effect, as Togo did at Tsushima⁷⁶³. Speed remained a key tenant, but, they argued, it was important because it offered a choice of range rather than always allowing the maximum range. By implication came the final, fifth, piece of the argument. With speed increasing and gunnery increasing, armor would have be traded away. Yet, if a ship had a range advantage and fought at the limits of that range, a lack of armor would be inconsequential, as she would never come under fire⁷⁶⁴.

In contrast, Mahan and his followers disagreed with almost every tenet of the Fisher tactical system. Mahan stressed the importance of the individual leader; and the captain, and to a

Scientific American Supplement, April 19, 1902 republished in *The Proceedings of the United States Naval Institute*, 28:2 (April 1902) pages 403-415

⁷⁶² Admiral Sir Reginald H. Bacon, *The Life of Lord Fisher of Kilverstone, Admiral of the Fleet O.M., G.C.B., G.C.V.O., LL.D.*, volume 1 (Hodder & Stoughton, 1929), pages 247-269.

⁷⁶³ Jon Tetsuro Sumida, "The Quest for Reach: The Development of Long Range Gunnery in the Royal Navy, 1901-1912," in Stephen D. Chiabotti, (editor) *Tooling for War: Military Transformation in the Industrial Age* (Imprint Publications, 1996)

⁷⁶⁴ David K. Brown, "Attack and Defence No 5: Prior to World War I," *Warship IX* (Conway Maritime Press, 1985), pages 115-124 and "The Russo-Japanese War: Technical Lessons as Perceived by the Royal Navy," *Warship 1996* (Brassey's, 1996), pages 66-76

less extent the crew, became the focus of action and effort⁷⁶⁵. Thus, he felt, superior tactics by an admiral could negate all but the most lopsided speed differential. The primary effect of fire was moral; i.e., crews, captains, and admirals were beaten, and not the actual ships *per se*. The effect of being under fire, having shells explode all around the ship, and gunfire smashing through funnels, masts, decks, the superstructure, having unarmored portions of the vessel split apart and men horribly mangled and killed, was a terrifying and disorienting experience⁷⁶⁶. In examining Tsushima, Mahan and his followers argued that the Russians were beaten long before Togo's guns sank *Oshyabya* and turned on the column of *Orel* class battleships. At the Yellow Sea, smashing the bridge and killing Vitgeft sent the whole Russian fleet into a meaningless circle, eventually causing individual ships to break the line and flee. While no capital ships were sunk, the breakout was thwarted, some ships fled to internment, and the Pacific Fleet would never again leave Port Arthur under the Russian flag. Prior to Yellow Sea, the death of Makarov in the explosion of the *Petropavlovsk* was cited as the decisive event in the fate of the Pacific Fleet. In material terms, the loss of *Petropavlovsk* herself was not decisive, and was indeed more than balanced by the loss of the Japanese *Hatsuse*, *Yashima*, and *Yoshino* the following month. However, the moral loss of the Russian commander, Admiral Makarov, was decisive. The failed breakout attempted by Vitgeft and the eventual sinking of the fleet by Japanese batteries using 203 Meter Hill were all just putting into physical form what had been decided with the loss of Makarov. Even at Ulsan, they argued, the Russians were beaten long before losing the obsolete and slow

⁷⁶⁵ Jon Tetsuro Sumida, *Inventing Grand Strategy and Teaching Command: The Classic Works of Alfred Thayer Mahan Reconsidered*, (Johns Hopkins University Press, 2000).

⁷⁶⁶ In addition to the demoralization effects of such a firestorm, Custance and McCully argued that it also threw off fire control efforts on the target ship, thus diminishing the frequency and accuracy of return fire.

cruiser *Rurik*. Generating a volume of fire was the most effective way of demoralizing the crew, and volume was augmented by medium caliber rapid firing guns as well as by fire from multiple platforms. Actually sinking a ship by gunfire was more of a chance event, (and one, they conceded, more likely to occur with hits from heavy guns) thus distributing the firepower of the fleet among several ships minimized the effect of a chance event on the outcome of the battle.

Moreover, the Mahanians argued, the tendency towards large fast heavily armed capital ships would necessarily reduce the number of ships built. They recognized that naval budgets were not infinite, and as the size and complexity of capital ships grew, so to would their cost, meaning that fewer ships would be available. This, to the Mahanians, produced a precarious state of “putting all one’s naval eggs into one or two vast, costly, majestic, but vulnerable baskets”⁷⁶⁷. Mahan preferred a larger fleet of less powerful ships to this risk.

The controversy between the two approaches predated the Russo-Japanese War. While Fisher did not ascend to his position as First Sea Lord until after the outbreak of war, he had already been emphasizing speed and range from his post as commander of the British fleet in the Mediterranean, and later as Second Sea Lord⁷⁶⁸. The Japanese Navy was trained and built by the Royal Navy, and the Fisher school of ship design had already influenced the

⁷⁶⁷ Frederic Manning, *The Life of Sir William White* (John Murray, 1923) page 471.

⁷⁶⁸ Nicholas A Lambert, *Sir John Fisher’s Naval Revolution* (University of South Carolina Press, 1999), especially pages 75-76.

design of capital ships under construction prior to the outbreak of the Russo-Japanese War, though the Japanese were also to continue building ships with a secondary battery⁷⁶⁹.

Custance and his allies were certainly engaged in a *political* argument with Fisher and his supporters over the direction of British naval strategy, architecture, and tactics. Yet this political discussion was not one of *economic interests*, but of a fundamental disagreement about the assumptions underpinning naval warfare. Custance argued under a pseudonym in a popular magazine that

the conceptions of war held by the present naval advisors of the Government are fundamentally unsound and opposed to the lessons not only of the past but of the war just ended [the Russo-Japanese War]. In battleships they are relying on great size rather than on superior tactics... In armoured cruisers fighting power is sacrificed to speed... Both views are equally destructive of the true spirit and are opposed to the traditions of the Navy⁷⁷⁰.

The debate about how victory was achieved in a naval engagement linked directly to capital ship design. Captain Alfred Thayer Mahan attacked the terminology mix that the *Invincibles* represented. The modern armored cruiser, which became the battle cruiser, obfuscated, what he felt, were irreconcilable tradeoffs in warship design.

The very words 'armored' and 'cruiser' are in direct opposition, as one might say 'heavy light cavalry'. The type discards unity of design and deliberately embraces double purpose. A cruiser should be like a bird of prey, of strong wing and rapid flight, which seeks not equals, but inferiors... As these two qualities should in the battle ship be, not ignored, but subordinated to fighting power, so in the cruiser gun power and armor are to be subordinated, and in the main discarded... Opposition to the present breathless increase of speed in battle ships proceeds, not from any

⁷⁶⁹ Kathrin Malinovich, "*Nanima* and *Takachiho*: Elswick-built Protected Cruisers of the Imperial Japanese Navy," *Warship 2004* (Conway Maritime Press, 2004) pages 29-56; Archer Jones and Andrew J. Keogh. "The Dreadnought Revolution: Another Look," *Military Affairs* 48:3 (July 1985) pages 124-131.

⁷⁷⁰ Admiral Sir Reginald Custance (under the pseudonym "Barfleur") "The Battle of Tsu Shima," *Blackwood's Magazine* February 1906, reprinted in *Naval Policy: A Plea for the Study of War* (William Blackwood & Sons, 1907) page 189.

depreciation of speed as such, but from the conviction that in every class of naval vessel there should first of all, and first and last, throughout her design be the recognition of her purpose in war. All other necessary qualities should be regarded as merely ministering to this one purpose, which in battle ships is offensive power exerted in fleets, and in cruisers long-continued speed in vessels meant to act for the most part singly⁷⁷¹.

Mahan accepted the deductive power of Sims' arguments on speed and armament, but tried to show that superior tactical handling could overcome minor speed differentials in engagements that both sides desired. Superior speed would only prove critical in instances where a faster force was interposed between a slower squadron and its goal, such as was the case with Togo at Tsushima, or in cases of direct pursuit, such as Ulsan. And even at Ulsan, Kamimura was forced to break off the chase of *Rossija* and *Gromoboi* if he wished to concentrate against the stricken *Rurik*. Thus for decisive battlefleet action, Mahan maintained, based on trigonometric calculations, speed was of limited tactical utility⁷⁷². In his private letters to Roosevelt, dealing with Sims' criticisms of Mahan's analysis and the debate within the Navy, Mahan included and lauded clippings of three of Admiral Sir Reginald Custance's anonymous Barfleur articles in *Blackwood's Magazine*⁷⁷³. Mahan also partially disengaged from the argument, noting that

⁷⁷¹ Captain Alfred Thayer Mahan, "Reflections, Historic and Other, Suggested by the Battle of the Japan Sea" Congressional Testimony, Committee on Naval Affairs 14 January 1907, 59th Congress, 2nd Session, Document 213, bound as *Size of Battle Ships* (no date, no publisher) page 18.

⁷⁷² Captain Alfred Thayer Mahan, letter to Theodore Roosevelt, 22 October 1906, reproduced in *Letters and Papers of Alfred Thayer Mahan, Volume III: 1902-1914*, edited by Robert Seager III and Doris D. Maguire (US Naval Institute Press, 1975) pages 185-189

⁷⁷³ These three articles were "The Speed of Capital Ships," (October 1906); "The Growth of the Capital Ship," (May 1906) and "Lessons from the Battle of Tsushima," (February 1906). All three of these articles were reproduced in Admiral Sir Reginald Custance (under the pseudonym "Barfleur"), reprinted in *Naval Policy: A Plea for the Study of War* (William Blackwood & Sons, 1907). Captain Alfred Thayer Mahan, letter to Theodore Roosevelt, 8 October 1906, reproduced in *Letters and Papers of Alfred Thayer Mahan, Volume III: 1902-1914*, edited by Robert Seager III and Doris D. Maguire (US Naval Institute Press, 1975) page 178. Mahan identified Barfleur as Custance.

I do not pretend to be fully equipped in tactical resource, and hold myself retired, as a rule from such discussion, though I present my views when asked. The Institute [*Proceedings of the US Naval Institute*] asked me for a paper. I have now neither time nor inclination for exhaustive study of tactics; and have besides full preoccupation in other more congenial matters. Still, as far as they go, I think my views sound; and if sound, they are pertinent⁷⁷⁴.

Admiral Sir Reginald Custance, Director of Naval Intelligence, linked Mahanian naval strategy specifically to the vocabulary used to classify ships.

Not understanding that the true aim in war is always to destroy the enemy's fighting force, and that this could only be done by a superior force, they [the Russian navy] weakened their main fleet by a detachment to raid the coast of Japan, an altogether secondary operation... They were now to learn the error of the idea, long current among them, that attack on the trade would create a powerful diversion. That idea had produced the 'armoured cruiser.' Mislead by the name, they may have thought that such ships would not add to the line of battle strength. If such was the case, the importance of shown of using proper terms and the danger of not doing so. The abolition of the misleading and unscientific term 'armoured cruiser' is a pressing need⁷⁷⁵.

Custance also linked Mahanian naval strategy into a critique of capital ship design, specifically design tradeoffs that favored superior speed at the expense of armament, and which called for armament optimized for sinking merchant shipping. Russian cruisers were designed with twin side by side forward and aft single mounted heavy guns, as opposed to the more conventional turret mounting. This allowed the ships to have more targeting flexibility forward and aft at the expense of broadside firepower⁷⁷⁶. Custance noted that

⁷⁷⁴ Captain Alfred Thayer Mahan, letter to Theodore Roosevelt, 8 October 1906, reproduced in *Letters and Papers of Alfred Thayer Mahan, Volume III: 1902-1914*, edited by Robert Seager III and Doris D. Maguire (US Naval Institute Press, 1975) page 180.

⁷⁷⁵ Admiral Sir Reginald Custance, *The Ship of the Line in Battle* (William Blackwood & Sons, 1912) page 113.

⁷⁷⁶ Fred T. Jane, *Fighting Ships 1905-1906* (Sampson Low Marston, 1905; ARCO Reprint, 1970), see especially pages 241 (*Gromoboi*), 242 (*Rossiia*), 244 (*Aurora* and *Diana*), and 247 (*Novik* class). See also Peter Brook, "Armoured Cruiser versus Armoured Cruiser: Ulsan, 14 August 1904," *Warship 2000-01* (Conway Maritime Press, 2000) pages 34-47.

the policy of attack on the defenceless merchantman and of evading action with the armed ship placed in the forefront the chase or the retreat and the value of end-on fire; broadside action was kept in the background. This explains the faulty dispositions of the 8-inch guns, and the mountings of some 6-inch guns that could not be used on either broadside⁷⁷⁷.

This armament layout, he argued, was exceedingly wasteful, and caused the Russian cruisers to punch below their weight in multiple engagements with the Japanese.

The armoured cruiser policy was not based originally on true conceptions of war. It involved not only a faulty strategy, but mistaken tactical ideals, both of which reacted on ship design. The essential feature of the armoured cruiser design was a sacrifice of fighting power to mobility in the ship of the line. If it is admitted that the policy was based on faulty strategy and tactics, that sacrifice cannot have been justified... In time of peace make-belief under mistaken ideas may be practiced with impunity, but in war there is no make-belief. Then realities will have to be faced, as by the Russians at Ulsan⁷⁷⁸

Custance also drew lessons from Tsushima on volume of fire, and directly and critically applied them in a Mahanian sense against Fisher's *Dreadnought*.

Guns have been reduced in numbers and increased in size to facilitate greater accuracy. The peace-trying principle of accuracy tends to undermine and destroy the war-trying principle of numbers. Is it wise and safe either to encourage this tendency or to over-elaborate and over-centralise the control system? Are not the present gunnery ideals based on peace theory rather than on war practice?⁷⁷⁹

In a popular article, written for *Blackwood's Magazine*, Custance, writing under the pseudonym Barfleur, made the point again.

The larger gun, no doubt, makes better shooting at *long* ranges, but at *decisive* ones - 5000 yards and under - the difference is not great. It is the business of an admiral to concentrate on a part of the enemy at decisive ranges, with a view to crushing that part before it can be supported. To play at long bowls and miss the opportunity, as

⁷⁷⁷ Admiral Sir Reginald Custance, *The Ship of the Line in Battle* (op cit) pages 157-158.

⁷⁷⁸ Admiral Sir Reginald Custance, *The Ship of the Line in Battle* (op cit) page 158.

⁷⁷⁹ Admiral Sir Reginald Custance, *The Ship of the Line in Battle* (William Blackwood & Sons, 1912) page 186.

did Togo on August 10, is to increase the probability of chance hits [emphasis added]⁷⁸⁰.

Half way through the war, as part of the 1905 *Naval Annual*, Admiral Sir Cyprian Bridge, having recently retired from the position of Chief of the China Squadron, wrote an essay on the lessons of the Russo-Japanese War⁷⁸¹. While Tsushima had not yet been fought, Bridge had the results of Ulsan, Yellow Sea, Chemulpo, and the blockade of Port Arthur. He notes that speed superiority had “no great value as a factor in general tactics,” that “suitable dispersion should be given to the instruments of offensive power,” and the “extreme importance of the moral qualities in war”⁷⁸².

The argument was replayed at the 1910 meeting of the Institution of Naval Architects in London. Rear-Admiral Sir R. H. C. Bacon presented a paper entitled “The Battleship of the Future,” which provoked discussion from the audience. Bacon argued that

It must be appreciated that a 6-in. gun at long range is of no use at all against thick armour, and against the lighter armour and superstructures the small burster and the light weight of the shell militate against much real damage being done to the ship, even by a large number of such projectiles. It is held that ‘a hail’ of such projectiles is liable to damage communications, &c. This might possibly have some weight provided that ‘the hail’ really exists in practice, or that if it exists ‘the hail’ hits the ship. As a matter of fact, when gun fire is handled so as to attempt to obtain hits, rapidity of fire falls very much below the possible rapidity of fire of the gun... It is

⁷⁸⁰ Admiral Sir Reginald Custance (under the pseudonym “Barfleur”) “The Battle of Tsu Shima,” *Blackwood’s Magazine* February 1906, reprinted in *Naval Policy: A Plea for the Study of War* (William Blackwood & Sons, 1907) page 183

⁷⁸¹ Bridge and Custance have been described as Britain’s “intellectual sailors” given their professional activities and publications on Naval history and strategy. Geoffrey Till, “Corbett and the Emergence of a British School?”, in Geoffrey Till (editor) *The Development of British Naval Thinking: Essays in Memory of Bryan Ranft* (Routledge, 2006), page 66.

⁷⁸² Admiral Sir Cyprian Bridge, “The Russo-Japanese Naval Campaign of 1904,” in Thomas Allnutt Brassey (editor) *The Naval Annual, 1905* (J. Griffin & Co., 1905) pages 170-171.

generally considered that 6-in. fire at ordinary battle range may be discounted when accompanied by 12-in. gun fire⁷⁸³.

This provoked a response from Sir William White, retired Chief Constructor for the Royal Navy, who shot back that he

had the advantage of holding conversations with men of the highest position in the Japanese naval service, who know all about the Russo-Japanese War. They confirm the opinion which I personally have maintained, viz., that it is worth while [sic] to have a powerful secondary armament in a battleship... I am informed by those who are in possession of the facts, by naval officers of great experience, who know all about the battle practice of the Navy, that the analysis of that practice shows that there can and will be such a hail of fire from 6-in. guns on a ship in action⁷⁸⁴.

Admiral W. H. Henderson, one of the founders of the *Naval Review*, defended White, adding that

I do know from conversations with Japanese officers who were at the Battle of Tsushima, and from what little I know from experience, it is a matter which has to be considered very seriously. When you come to rapid fire, the actual number of hits with the smaller gun- the medium size gun- is greater than with larger guns⁷⁸⁵.

In reply Bacon attacked the

reference to the Russo-Japanese War, and the value of secondary armaments... Those battles were not fought with *Dreadnoughts*, but with the old type of ship, which merely had four big guns intermixed with a lot of small ones... Had the actions been carried out with *Dreadnoughts*, we should now hear a good deal less about 6-in. guns⁷⁸⁶.

⁷⁸³ Rear-Admiral R. H. S. Bacon, "The Battleship of the Future," in R. W. Dana (editor), *Transactions of the Institution of Naval Architects*, LII: (Henry Sotheran & Co. 1910) page 5. While ostensibly a defense of the *Dreadnought* class, the lengthy discussion of armoring and speed make it clear that Bacon was as concerned with the *Invincible* class battle cruiser as he was with the battleship.

⁷⁸⁴ White, Sir William H., comments on Rear-Admiral R. H. S. Bacon, "The Battleship of the Future," in R. W. Dana (editor), *Transactions of the Institution of Naval Architects*, LII: (Henry Sotheran & Co. 1910) pages 12-14.

⁷⁸⁵ Admiral W.H. Henderson, comments on Rear-Admiral R. H. S. Bacon, "The Battleship of the Future," in R. W. Dana (editor), *Transactions of the Institution of Naval Architects*, LII: (Henry Sotheran & Co. 1910) pages 15-16

⁷⁸⁶ Rear-Admiral Reginald H. S. Bacon, "The Battleship of the Future," in *Transactions of the Institution of Naval Architects*, pages 18-19.

A year later, in the 1911 meeting, the roles were reversed. Admiral Sir Cyprian Bridge read a paper on the relationship between naval architecture and tactics⁷⁸⁷. Bridge attacked the technological determinism put forward by the advocates of *Dreadnought*. “Is the oscillation [of warship design efforts] due to recognition of tactical principles, or is it a contest of architectural development?”⁷⁸⁸. Now in the audience, Admiral Bacon attacked.

Whenever we mention the word ‘tactics’ we ought never to forget that the one sole and only object of tactics is to place the guns of your fleet in the most effective position as regards the enemy; there is no other object in tactics. Therefore tactics is, and must be, solely the handmaiden of the gun... To effect this the main factor which influences tactics is the mobility of the ships. Without mobility or with increased mobility tactics must vary, so the two main causes that vary tactics are, one, the development of the gun; the other, the mobility of the fleet.⁷⁸⁹

Bridge was joined in his defense by Admiral Capps (Chief Constructor to the US Navy), Admiral Dyrssen (President of the Swedish Admiralty Board), and William Hovgaard (a Danish naval officer, professor of naval architecture at MIT, and technical advisor to the US Navy Constructor’s office). In summing up, Bridge noted that with respect to speed and armament

the superiority it held for a very, very brief period, so that I do not know that we could take that as being a governing factor or a factor of any great importance in modern naval tactics. I need scarcely say that I accept with complete agreement

⁷⁸⁷ Admiral Sir Cyprian Bridge, “Fifty Years’ Architectural Expression of Tactical Ideas,” in R. W. Dana (editor), *Transactions of the Institution of Naval Architects, LIII: Jubilee Meetings Part II* (Henry Sotheran & Co. 1911) pages 34-49.

⁷⁸⁸ Admiral Sir Cyprian Bridge, “Fifty Years’ Architectural Expression of Tactical Ideas,” (op cit, 1911) page 41.

⁷⁸⁹ Rear Admiral R. H. S. Bacon, Comments on Admiral Sir Cyprian Bridge, “Fifty Years’ Architectural Expression of Tactical Ideas,” in R. W. Dana (editor), *Transactions of the Institution of Naval Architects, LIII: Jubilee Meetings Part II* (Henry Sotheran & Co. 1911) pages 44-45.

what Admiral Dyrssen said about the importance of the *personnel* [emphasis original]⁷⁹⁰.

These different theories of naval warfare caused the various partisans to emphasize different metrics, and to relay a different explanatory narrative to accompany a description of the naval events that they witnessed. All observers saw the Russians badly defeated at Tsushima. Mahan, Custance, and McCully saw poor Russian tactics allow the Japanese to deploy their nearly 2:1 superiority (110 to 59) of medium caliber guns and break the Russian fleet by a tremendous volume, which the Russian superiority in heavy armament couldn't overcome. Their will broken, the Russian fleet scattered and ceased to act offensively, at which point it was obliterated. Sims, Corbett, Pakenham, Jackson, and the British *Official History (Naval and Military)* saw a faster Japanese fleet outmaneuver the Russians to deploy a local superiority of heavy guns by repeatedly crossing the **T** and sinking the Russian battleships, with both sides having ineffectual, and in the Russian case, counterproductive medium batteries⁷⁹¹. The Russians continued to fight bravely, but superior concentration of fire sank the Russian battlefleet ship by ship.

Critically, both the advocates and critics of the all-big-gun capital ship, and all which that entails, produced narratives that were internally consistent and consistent with the positions held by these groups prior to the Russo-Japanese War. Moreover, to the extent that these

⁷⁹⁰ Admiral Sir Cyprian Bridge, "Fifty Years' Architectural Expression of Tactical Ideas," (op cit, 1911) page 48.

⁷⁹¹ The Japanese secondary battery would have been equally counterproductive, but for the fact that the Japanese were reported to have largely held their fire while the Russians fired rapidly. Pakenham report "Comments on the Battle of the Sea of Japan," 6 May 1905, Great Britain Admiralty Intelligence Office *The Russo-Japanese War 1904-1905: Reports from Naval Attachés* (republished by Battery Press, no date), page 386.

groups engaged in data driven analysis, the theory of war led them to select different confirmatory evidence search patterns. These traditions and concepts were, to Custance, historical truisms through the centuries. When he revisited the theme in 1912 he closed his book by noting, in a passage redolent with resort to historical metaphor, that

an old and well-proved principle underlies the facts laid before you in these and previous papers. That principle gave the English bowmen victory in the Middle Ages, governed Napoleon's use of artillery, and enabled Wellington's thin red line to defeat Napoleon's columns. The same principle made the three-decker of the past the most powerful instrument of war at sea. The principles is the development of fire effect to the fullest extent possible⁷⁹².

Conclusion: Naval Warfare

By shifting the basis of group identity from pure bureaucratically defined self interest to ideationally defined groups, we can revisit some of the earlier heuristics discussed in the previous chapter and, much as we have done for military aspects of the Russo-Japanese War, gain powerful leverage on naval operations in the Russo-Japanese War. As shown above, the existence of what became the Mahanian position on capital ships and what became the Fisher position predated the Russo-Japanese War, and became the central issue in navies with the decision of Fisher to push forward *Dreadnought* and *Invincible* concurrent with the Russo-Japanese War⁷⁹³. Using this revised notion of group identity I will reexamine the cognitive hypotheses from the previous chapter.

⁷⁹² Custance, Admiral Sir Reginald *The Ship of the Line in Battle* (William Blackwood & Sons, 1912) pages 191-192

⁷⁹³ *Dreadnought* was laid down in October 1905, both she and the *Invincibles* were products of an early 1905 authorization and a 1904 design committee shaped by Fisher. Tsushima was May 1905, and thus chronologically following the authorization of the British designs. Nicholas A. Lambert, *Sir John Fisher's Naval Revolution* (University of South Carolina Press, 1999)

The confirmation bias failed its previous test because it was framed around support or dissent from the current doctrine of the respective observers' military. Framing it around the Mahanian and Fisher defined groups produces substantial improvement [see chart below].

6-3: Summary of Naval Ideational Findings

Country	Service	Author	Title	Official	Dates	Surface Warfare Characteristics							
						Volume	Armament	Range	Size	Speed	Mine	Torpedo	Damage
USA	Navy	McCully	Reports	Yes	1906	Yes	Mixed		No	No	Yes	No	Morale
USA	Navy	Mahan	Size of Battleships Naval Strategy Correspondence	No	1907-1911	Yes	Mixed	Short	No	No	Yes	No	Morale
USA	Navy	Mahan	Naval Strategy	No	1911	Yes	Mixed		No	No	Yes	No	
GB	Navy	Custance Barfleur	Ship of the Line Naval Policy	No	1912	Yes	Mixed	Short	No	No	Yes	No	
GB	Navy	Bridge	The Naval Campaign Tactical Ideas	No	1905-1911	Yes	Mixed	Short	No	No	Yes	No	Morale
GB	Navy	White	Battleship of the Future	No	1910	Yes	Mixed	Short	No	No			Morale
USA	Navy	Sims	Inherent Tactical	No	1907	No	ABG	Long	Yes	Yes	Yes		Physical
GB	Navy	Jackson	Reports	Yes	1904-05	No	ABG	Long		Yes	Yes	No	
GB	Navy	Bacon	Battleship of the Future	No	1910	No	ABG	Long	Yes	Yes	Yes	No	Physical
GB	Staff	Staff	Official History	Yes	1910	No	ABG	Both		Yes	Yes	No	Physical
GB	Navy	Pakenham	Reports	Yes	1904-05		ABG	Both	Yes	Yes	Yes	No	Physical
GB	Civilian	Corbett	Maritime Ops	Yes	1914			Long		Yes	Yes	No	Physical

Volume: Is volume of fire the critical attribute of naval gunfire?

Armament: Mixed battery or "all big gun" (ABG)?

Range: Ideal range at which capital ships should engage

Size: Should capital ships be increased in size?

Speed: Is speed an important tactical advantage?

Mine: Was the mine an important weapon?

Torpedo: Was the surface fired torpedo an important weapon?

Damage: Was it more important to strike the morale of the crew or to inflict physical damage?

What is astounding about the pattern that emerges is that the value of the observers on any one item can be used to predict all of the others. Two internally consistent, but diametrically opposed, views of naval tactics are "confirmed" by the observers. The Fisher concept of the fast, lightly armored, all big gun, large capital ship sinking its enemies lines up exactly against the Mahanian concept of the slower, heavier, mixed armed, smaller and more numerous fleet overwhelming its opponents with their volume of fire. The mine and the torpedo, neither of

which struck at the core of either notion of capital ship design, exhibited universal convergence, as consistent with the Bayesian approach. But the tactical ideas of capital ship design clearly split the observers, across national boundaries.

Not only are the groups aligned, but they engaged in argument that reflected a focus on potentially confirming evidence, rather than disconfirming evidence. In his analysis of Tsushima, Custance focused on the aggregate broadside strengths of the two fleets, which showed the Japanese with a 110-59 advantage in medium guns and a 17-41 disadvantage in heavy guns and the fact that long before they were sunk the Russian line had fragmented, allowing for Japanese concentration. Custance argues that “the *matériel* school will forget that the great object in battle is to upset the moral equilibrium of men rather than to perforate armour”⁷⁹⁴. With their equilibrium upset by the volume of fire generated at close range, Custance argues, the Russians were destroyed. Sims, however, goes to great pains to show how superior speed allowed the Japanese to negate their overall inferiority in heavy guns by repeatedly crossing the **T** of the Russians, and achieving local superiority.

Neither side in the debate contends with the other. Both cite the same armament statistics from *Jane's Fighting Ships*, but Custance argues that the superior concentration of the Japanese was only after the Russian line fragmented (and thus when the Russians were already beaten), while Sims continues to stress speed⁷⁹⁵. Both sides find statistics which seemingly

⁷⁹⁴ Admiral Sir Reginald Custance, (under the pseudonym “Barfleur”) “The Battle of Tsu Shima,” *Blackwood's Magazine*, February 1906, reprinted in *Naval Policy: A Plea for the Study of War* (William Blackwood & Sons, 1907) page 182

⁷⁹⁵ Lieutenant Commander William S. Sims, “The Inherent Tactical Qualities of All-Big-Gun, One Caliber Battle Ships of High Speed, Large Displacement and Gun Power” Congressional Testimony,

confirm their previously held beliefs, and both sides cite these statistics in support of their position.

An Alternative Explanation? Personal Career Opportunism

The ideational approach has performed better than the other approaches, and demonstrated more explanatory power than the other rival theories. Yet it is open to one line of attack, that is that individuals may be reflecting the ideas and doctrine of their own military not because they believe in the power of those ideas, but because they fear diminished career prospects if they depart from orthodoxy. This alternative explanation is, like the bureaucratic approach, interest based. But unlike bureaucratic politics it does not focus on the interests of the organization to maximize resources and autonomy, but instead focuses on the mid-level individual's desire to maximize promotion and prestige.

The individual observers and commentators examined were all on prestigious career paths. Some of them were flag officers, and many more were young Colonels and Navy Captains who were on track to earn flag rank. By publishing for a military audience in professional journals or military presses, they were clearly seeking to display their views in front of peers and superiors, in many cases up several rungs in the chain of command. Furthermore, those that were official observers or writers of official history had themselves been selected by the military hierarchy, and thus might be suspected to be a bureaucratically safe pair of hands in which to entrust a sensitive task.

Committee on Naval Affairs 14 January 1907, 59th Congress, 2nd Session, Document 213 bound as *Size of Battle Ships* (no date, no publisher), navigation track chart insert facing page 26.

While logically plausible, this alternative explanation is untenable. In the cases discussed here the ideational divide on military and naval matters split *across* the armed forces of the observing Great Powers. The presence of these ideationally defined divisions within militaries would suggest that personal careerism was subordinated to other motivations.

The military observers and commentators of the US and the UK drew contrasting lessons on aspects of tactics. But on military matters, the military with the strongest centralized doctrine was Germany. With its traditions of Prussian hierarchy and a strong formal military education system, this would be the military where one would expect the least dissent from an idea promulgated by no less than the Chief of the General Staff, von Schlieffen⁷⁹⁶. Yet even in this system there was important dissent. The *Official Account* did, it was true, reflect complete agreement with Schlieffen, and von Caemmerer's accompanying essays framing the *Official Account* for readers also reflected this view. But von Bernhardt used the Russo-Japanese War to argue that Schlieffen's operational system misused cavalry. Conversely, Balck argued that breakthrough was not impossible if proper, measured, and time consuming coordinated infantry and artillery assaults were made. Balck set his critique in the vein of the broader theories of von Schlichting. While important members of the German military disagreed with Schlieffen, they did so by resting their arguments in different theories about the use of force, rather than making their arguments in a doctrinal vacuum, or grafting those arguments on to Schlieffen's other theories.

⁷⁹⁶ Hajo Holborn, "The Prusso-German School: Moltke and the Rise of the General Staff," in Peter Paret (editor), *Makers of Modern Strategy* (op cit) pages 281-295, and Gunther E. Rothenberg (op cit), Eric Dorn Brose, *The Kaiser's Army: The Politics of Military Technology in Germany During the Machine Age, 1870-1918* (Oxford University Press, 2001)

With respect to the naval debates over caliber and speed, there could be no higher US Navy establishment figure than Captain Alfred Thayer Mahan. Much of what we know about Mahan's views on the Russo-Japanese War comes from private correspondence with Theodore Roosevelt, the sitting US President. Yet junior officers, such as Sims and Fiske, had no qualms about opposing Mahan, not just in broad principles, but in point by point refutations of his published writings about Tsushima⁷⁹⁷. Indeed, Fiske not only lined up against in print Mahan, but also provoked a reply from a Rear Admiral, to which Fiske further replied in print⁷⁹⁸. Mahan could count among his political allies the US Navy's Chief Constructor, Admiral Capps, and William Hovgaard, a senior technical advisor to the Constructor.

In the Royal Navy there was a similar rift among the leadership. Fisher was First Sea Lord, and thus the most powerful member of the uniformed service. Yet Custance, as Director of Naval Intelligence, published for the Navy under his own name, and to the more general public under an obvious pseudonym, his criticisms of Fisher specifically framed through a different interpretation of the naval battles of Tsushima and Ulsan. Admiral Bridge, with command of the Asiatic Fleet, supported Custance in print, while Admiral Bacon backed

⁷⁹⁷ Sims (op cit) "Inherent Tactical Qualities," and Commander Bradley A. Fiske, "American Naval Policy," *US Naval Institute Proceedings* 31 (1905) pages 1-80

⁷⁹⁸ Given the size of the peace time US Navy at the time, a Rear Admiral was a rather more imposing figure in 1905 than one would be today. Commander Bradley A. Fiske, (op cit) "American Naval Policy," 1-80 and "Compromiseless [*sic*] Ships," *US Naval Institute Proceedings* 31 (1905) pages 549-533, and the response from Rear Admiral Caspar F. Goodrich (who was responsible for the Pacific Fleet and later the New York Navy Yard), "Response to Fiske," *US Naval Institute Proceedings* 31 (1905) pages 693-98. Fiske would himself be promoted to Captain in 1907, and Rear Admiral in 1911. In 1913 he became "Aid to Operations" (known today the Chief of Naval Operations). He would retire from the Navy as Rear Admiral before the US entered the First World War.

Fisher. This provoked a stinging *ad hominem* attack at the Institution of Naval Architects 1911 meeting, from Admiral of the Fleet Sir Gerald Noel, who noted that “Rear Admiral Bacon is particularly conversant with and capable of discussing the construction of the original *Dreadnought*, and I believe he had a great deal to say on the matter. I have known him many years, and I know him to be a man full of ideas, some of them sound, but not all”⁷⁹⁹. The observing Captains and Commanders, attached to the Japanese fleet, waded in, criticizing Custance, Bridge, and Noel, and even questioning some aspects of Fisher’s concepts.

Analysis: The Ideational Research Program

The cultural-cognitive research program performed relatively well. It explains many of the results that the other research programs were unable to explain, it explains all that the other programs did explain, and it suggested explanations for novel facts, which a short examination seemed to support. The cultures illustrated here were not national cultures, but were transnational ideationally based communities. By translating each others writings, cross publishing, engaging in official and unofficial correspondence, working together as observers, and advising on policy these cultures represented early versions of what we would now call epistemic communities. These shared bodies of ideas explained what people learned from the Russo-Japanese War.

⁷⁹⁹ Admiral of the Fleet Sir Gerald H. Noel, comments on Rear-Admiral R. H. S. Bacon, “The Battleship of the Future,” in R. W. Dana (editor), *Transactions of the Institution of Naval Architects*, LII (Henry Sotheran & Co. 1910) page 9

The cultural cognitive research program rests on some cognitive causal mechanisms. In particular, the confirmation bias, the use of shared metaphors and analogies, and cognitive closure worked within each ideationally based culture to allow observers and commentators to draw lessons that were consistent with the core precepts of their respective culture, discard those that were discordant, and deemphasize those that had no bearing one way or another, such as the use of indirect fire.

The first section of this chapter looked at strategic issues, namely the interrelation between land and sea power. Mahan argued that naval power was paramount, and that naval power reached its height with the decisive naval battle between battlefleets. Corbett instead advanced a theory of maritime power, stressing the interrelation between land and sea and the inability of a dominant navy, alone, to force a decisive battle and achieve unfettered control. Both Mahan and Corbett stressed the economic sinews of power. MacKinder argued that naval power was becoming less effective as advanced transportation technology and industrialization made it possible for land powers to project power more efficiently and more rapidly at the frontiers. Moreover, the resources needed for advanced industrialized societies were located in the Eurasian heartland, not on the periphery, and thus interior nations had an advantage in access to, and denial of, resources *vis-à-vis* island powers. All three were writing their theory during the Russo-Japanese War, and so had the opportunity to comment specifically on the Russo-Japanese War. They all found confirmation and support in the events of the war.

We saw that the views of our observers and commentators, even excluding the theorists themselves, fell neatly into these three categories, with many of them explicitly citing the

three theorists for support. More importantly sea power advocates held a number of shared beliefs, not only stressing sea power, but making parallel arguments about trade and economic factors, in some cases backed with detailed data. The British *Official History (Naval and Military)*, for example, included a detailed analysis of sovereign debt rates during the war, emphasizing how dependent the Japanese were on access to capital markets at attractive rates, and how spot rates changed as the war progressed. Such an analysis would have been stunningly out of place in the German *Official Account*, with its deep focus on operational art.

At the level of strategy and tactics the dominant personality at the turn of the century was the German Field Marshal, Graf von Schlieffen, Chief of the General Staff. Through the General Staff system Schlieffen was able to inculcate and enforce a dogmatic system based on envelopment, discipline, operational maneuver, an ignorance of tactics, and rigid adherence to the plan by an iron willed commander. This is precisely what the German *Official Account*, and the few independent publications we have from German staff officers, emphasized. The exceptions here were von Bernhardt, Scherff, and Schlicting. However all three of these theorists had previously voiced their opposition, for different reasons, to Schlieffen's approach, and these three also drew lessons that supported their pre-existing dissent from Schlieffen's approach.

The British and Americans had no such strong operational and tactical personality. They drew different lessons. Without the dominant influence of a single set of ideas they had more flexibility in interpreting results, and often agreed on issues such as the machine gun, the likely rates of advance, and assault tactics.

Furthermore, Schlieffen stresses the early and absolute commitment of reserves. We did not introduce reserve fractions before, because there were no good bureaucratic interest or cognitive reasons why reserve fractions would be perceived differently, i.e., there was no reason to test. Schlieffen as a cultural influence provided a reason, and so we looked at the issue of reserve fractions in more detail. As predicted, the British and American writers emphasized the risks of such an early commitment, just as they emphasized the risks of envelopment, especially by a numerically inferior force. This could clearly be seen in their respective discussions of Liao-yang, while the Germans saw Liao-yang as the most spectacular Japanese success of the war.

As suggested by the findings on strategy, we also noticed an operational difference on railroads. The German *Official Account* and writings emphasized the maneuver granted to the attacker by virtue of railroads, a clear echo of MacKinder's strategic proposition about the value of rail networks. The US and British argued, instead, that railroads were providing an advantage to the defense, and were thus likely to make maneuver more, not less, difficult. The Russians could retreat more quickly than the Japanese could advance, and thus repeatedly escaped destruction while slowly retreating.

The last section examined the issue of naval tactics and capital ship design. Captain Mahan was again the leader of one of the approaches, but in this instance Admiral Sir John Fisher led the other approach, supported by Corbett. While both agreed about the importance of sea power, they had radically different views on how to actually fight a naval battle. Mahan emphasized the moral effects of fire on the crew. He believed that the crew and captain could become ineffective if traumatized by shellfire, damage to unarmored parts of a ship,

and loss of life. He thus advocated a mixed battery delivered at close range by a large number of relatively small capital ships. Fisher believed that the human element had been reduced by advances in naval technology. He argued that battles were won by sinking ships, not frightening crews. To best sink ships the capital ship should be armed with large caliber long range guns, and should have a speed advantage. Using high speeds and long ranges it would be possible to engage the enemy and destroy them before they were able to return accurate fire. This was important, as the heavy armament and large power plant necessitated a reduction in armoring, creating what has been termed an “eggshell armed with hammers”.

This was the most clearly transnational set of rival cultures. Mahan, Sir Reginald Custance, and Sir William White were making coordinated attacks, on both sides of the Atlantic, against Fisher, occasionally appearing together and well aware of each others’ individual writings. Fisher, for his part, had an ally in Corbett, who viewed high speed as necessary for strategic reasons, and William Sims, an eloquent and rising star in the US Navy. As these analysts debated the lessons of the Russo-Japanese War in open and restricted journals, the arguments became more detailed. Mahan and his supporters consistently emphasized the advantage of medium guns for the Japanese, the navigation errors of the Russians, and the breakup of the Russian formations prior to the sinking of the capital ships.

Sims and Corbett, as well as Fisher’s supporters in the Royal Navy, argued that Mahan’s navigation data were wrong, that Togo had been able to use superior speed to achieve local superiority in heavy guns by crossing the **T** of the Russians, and that the most damage, including the early sinking of *Oshyabya* and crippling of *Sworov*, was achieved during these crossings, and not during periods of parallel broadsides. They also argued that the Japanese

held their fire of medium batteries, while the Russians fired at high speed, and thus the Russians generated superior volume of fire. This, they noted, was decisively defeated by the Japanese concentration of heavy guns.

In each section the cultural-cognitive approach seems to explain much of the variance that could not be explained by the other theories. As importantly, the observations in the three sections tend to reinforce each other, such as Corbett's concern for strategic speed and the German interest in railroads and operational maneuver. The approach also explains the novel fact of differing views about reserve fractions, which, had it been introduced earlier, would have been another anomaly for the Bayesian approach. Finally, in areas where there was no strong cultural position, such as for artillery tactics⁸⁰⁰ or the torpedo threat⁸⁰¹, observations tended to converge, as Bayes would have predicted. The success of the cultural-cognitive model on so many different fronts adds additional strength to the approach, and allows us to conclude that this research program seems to have the strongest explanatory power.

⁸⁰⁰ Importantly, the French dissented in the area of artillery tactics. The French tactical system was dominated by Langlois, who stressed close range destructive direct fire. We only have two French primary sources that dealt with artillery, however, and one of those was written by deNegrier, the doctrinal rival of Langlois. Thus we could not introduce this "n of one" as a piece of evidence in the body of the dissertation, and must leave this as a suggestive, but inconclusive, data point to be followed by an investigator with access to the French archives and a talent for turn of the century French military language. On Langlois, translations of fragments of French views on the Russo-Japanese War, and French direct fire artillery doctrine see Robert M Ripperger, "The Development of the French Artillery for the Offensive 1890-1914," *The Journal of Military History* 59:4 (October 1995) pages 599-618

⁸⁰¹ Again, the French and their *Jeune Ecole* approach would have been useful tests, but they do not appear to have written much that has been translated (or cited, even without translation) in either the 1905-1938 period or the contemporary period. This also looks to be an avenue for future scholarly inquiry.

Chapter 7: Synthesis

“When victory has declared itself, however, judgment is facilitated. Stripping away what can then be seen to have been merely accessory, the chief incident receives due prominence, and there only remains to be decided wherein lay the elements of success at that moment”⁸⁰²

While it has since been overshadowed by two World Wars during the twentieth century, and a modern global struggle in the twenty-first, the Russo-Japanese War was one of the most destructive and horrific wars the world has seen. And the world, at the time, was looking. Substantial effort was undertaken by the Great Powers to send their best officers as observers, many of whom would rise to field commands and staff positions in the coming European conflagration, to study the Russo-Japanese War and bring back wisdom that would allow their own military to gain an edge over their rivals. These observations were carefully aggregated and blended with information obtained from other sources with the specific objective of drawing lessons that could be applied to the observing armies and navies.

This dissertation examined the lessons that were drawn from this experience. Unlike many works of history that seek to show, with the benefit of hindsight, how they “got it wrong”, I do not aspire to pass judgment on the correctness of the lessons drawn or the reliability of the narrative. Instead I use the vicarious learning experiences of these militaries to test the explanatory power of four rival research programs in which Political Scientists conduct social inquiry. These are the Bayesian, the bureaucratic interest based, the pure cognitive, and the ideational (or cultural-cognitive) research programs. Each has shown some

⁸⁰² Pakenham report “Comments on the Battle of the Sea of Japan,” 6 May 1905, Great Britain Admiralty Intelligence Office *The Russo-Japanese War 1904-1905: Reports from Naval Attachés* (republished by Battery Press, no date) page 387.

explanatory power in other Political Science research, and each makes unique predictions about the patterns of learning that should be evidenced in this case.

Upon reviewing the empirical record, I contend that the ideational approach provides the most leverage in understanding the lessons learned by observers. I reached this conclusion after conducting an investigation of the declassified and unclassified primary sources detailed in chapters three through seven. The investigation was guided by a set of theoretically derived hypotheses that generated critical areas of different predictions for the four research programs on matters of naval tactics, capital ship design, military tactics, military operations, and general strategy.

Chapter three examines the Bayesian approach. The Bayesian approach actually does rather well. There are a number of areas where rival research programs predicted divergence, but on many key issues most observers actually converged. For the most part observers agreed that indirect artillery fire for suppressive effect was the best use of artillery, and many added that machine guns, grenades, and mortars provided important close range suppressive effects for both the tactical offense and defense. Many also agreed that hasty entrenchments were an effective means of slowing or halting even the most determined offense, and that rates of ammunition consumption were surprisingly high. They also agreed that the military high command should be bold, rather than cautious. On naval matters they agreed that mines were a dangerous threat to capital ships in shallow waters, while torpedo boats and surface fired torpedoes were not a threat. They also agreed that commerce raiding was largely ineffective.

Yet there was a lot that the Bayesian research program could not explain. Observers and commentators did not agree about the performance or preferable tactic for cavalry, nor even whether the ground was suitable for cavalry or not! They did not agree about whether the surprisingly slow rate of Japanese advance was justified, either by logistics or the time consuming nature of combined arms assault. They did not agree about whether the Japanese followed German assault tactics through the duration of the war. They disagreed about the relative importance of spirit and discipline among soldiers, and they disagreed about the decisiveness of surprise. In matters of capital ship design and naval warfare there was extreme disagreement. The observers and commentators were split about whether ships were defeated morally (beaten) or physically (sunk), about whether a mixed battery including rapid firing medium caliber guns was superior to an all heavy gun design, about the tactical importance of speed and gunnery range, and about the desirability of a few large ships versus a larger number of smaller capital ships.

The tactical military differences were clearly seen at the fierce and critical battles of Nanshan and Liao-yang, where the various observers could not agree who won, and if somebody won, whether the margin of victory was narrow or decisive. These rather significant divergences on basic issues are problematic for the Bayesian approach, and suggested that we needed to look for our explanation elsewhere in an effort to explain these patterns of divergence. As we had already reviewed the historical record, the remaining chapters were somewhat shorter, and focused on the specific areas where the other research programs generated unique predictions.

The bureaucratic interest based approach performed the weakest of all the contending research programs. It passed the “hoop test” of having observers and commentators stress the importance of military preparedness and a lack of civil interference in military command and planning. This unanimity is not inconsistent with Bayesian or cultural-cognitive approaches either, but had we failed to find this the bureaucratic interest approach would have been in serious trouble.

As it was, at the level of the service, i.e., the navy and the army, the predictions broke down. We found multiple army officers who noted that the navy was at least as, if not more, important than the army. Some even suggested taking money away from the army to invest in the navy. Rather than pursuing the twin goals of autonomy and resources, we found many army and navy officers arguing for jointness and, in some cases, for the distribution of resources away from their own service. The navy was rather more circumspect, acknowledging the importance of joint operations, but hesitant to ascribe full decisiveness to the campaign on land. Yet even then, in the classified Official Admiralty history, Sir Julian Corbett noted the importance of the land component in a maritime war.

At the level below the service, the combat arm of the Army, the predictive accuracy of the bureaucratic interest based research program was equally weak. While we did notice that cavalry officers tended to defend the interests of their branch and the use of the *arme blanche*, and they tended explain away the failings of cavalry in the Russo-Japanese War, cavalry was the only branch that exhibited this behavior. Both artillery and infantry officers suggested that the other branch was more important, and many found support for combined arms. One artilleryman going so far as to call for the abolition of his branch as a separate part of

the army, and a full integration with infantry in order to make all but the heaviest of artillery organic to the regiment. We also had cases of infantrymen who stated that the most effective combined arms operations often killed a few friendly advancing infantry in order to keep the target suppressed until the last possible moment.

The acknowledgement of the emergence of a joint tactical doctrine, what Stephen Biddle calls the “modern system”, is a severe problem for bureaucratic interest. Both the infantry and the artillery consciously chose to abandon autonomy and resources in order to implement a more effective combined arms system. The failure of most observers and commentators to privilege their own branch and service, in the face of competing claims for resources; and the overt recommendations of combined arms tactics and joint strategies, cannot be explained by the bureaucratic vested interest based approach, and suggest severe shortcomings of this approach for a fruitful research program.

In the following chapter we explored the pure cognitive approach. This approach stresses the similarities of human cognition, and generally tends to expect individuals to make the same predictable, but flawed, judgments in the same circumstances. We truncated the cognitive approach, separating those heuristics and biases which are rooted in a group identity from those that are purely cognitive failures due to the difficulties in accurate observation across time and space. Unlike the other research programs in which the aspects are linked deductively, this approach is a collection of heuristics and biases which operate independently under certain conditions, and thus the failure of any one heuristic is not necessarily an indictment of the whole approach.

This research program also failed to generate a high level of predictive accuracy. It predicted that individuals would praise the winner's (and fault the loser's) tactical and naval systems. In fact, this was not the case, with both the winner and the loser receiving praise and criticism from almost all observers and commentators. It predicted that individuals would praise the manifestations of their own doctrine when seen in others, as well as refrain from critiquing their own doctrine. This also was largely not the case. While some, notably the Germans, did behave this way, many others did not, and criticized elements of their own doctrine as while praising other elements of that doctrine.

We predicted that the experiences of the last war would dominate the lessons drawn from this current war. In fact, this was not the case, with many observers reaching back deep into Napoleonic, or even Roman, history for military analogies, including analogies in which their own military was not itself a direct participant. Some directly and specifically denigrated and rejected the apparent lessons of their own last war, even when they had, themselves, been decorated for valorous actions in that last war. For example, we saw British authors explaining why both the Russo-Japanese War and the Boer War (their last war) did not allow for generalized notions about warfare. Even after the First World War, when we made the additional prediction that the large scale and seemingly complete failure of the vigorous offensive would change the views of analysts, we discovered, across a smaller body of literature, that the First World War experience had no effect on the military interpretation of events in the Russo-Japanese War.

We predicted that particularly vivid experiences would shape the lessons drawn. This was difficult to test, as observing war first hand is an inherently vivid experience, and the

documents were replete with vivid incidents. At some level, the whole Russo-Japanese War could be seen as a vivid experience for the observers. Many described vivid incidents to support their views, but to get more confidence in the predictive power of this approach I focused on trying to falsify the predictions. I focused on two particularly graphic examples where individuals went through vivid experiences, and yet drew conclusions opposite from what the experience would suggest, dismissing the disruptive effects of medium caliber naval guns against soft targets, and instead focusing on the destruction of ships. Furthermore, the suggestion that the observations of the observers would depart from the more removed conclusions of the official histories and other professional publications was not born out.

The cognitive approach did have some hints of success, however. We saw clear cases of individuals “explaining away” data that were apparently discrepant. But we didn’t have a theory that would tell us what these data were discrepant with, as it was not the current doctrine of the observer. We also saw that some groups seemed to engage in confirmation bias, though not always confirmation of their own stated military doctrine, and some groups seemed to have standard available metaphors and analogies that guided their interpretation of current events, though again it wasn’t clear where these came from, as it wasn’t necessarily the last war.

This led us to the fourth approach, the ideational cultural-cognitive research program. As the name suggests this is built on cognitive microfoundations. It recognizes the importance of culturally shared metaphors, analogies, vocabulary, causal relationships, and so forth. The cultures here, however, are not covariant with national identity. Instead, I argued that the cultures arose from the writings of a number of dominant military personalities, each with

specific foci on different elements of warfare. These theorists built internally consistent ideational narratives about how warfare worked. The observers and commentators, for their part, either entirely accepted or entirely rejected these systems of belief. In cases where the culture made a strong prediction about some rule of tactics, operations, or strategy, that prediction was “confirmed” by members of that culture with evidence gathered from the Russo-Japanese War. However there were areas where the culture made no strong prediction, such as artillery tactics. In that case, individuals were free to draw lessons unfettered by cognitive constructs, and thus behavior tended to align with the Bayesian predictions⁸⁰³.

The critical progenitors of culture were, in the case of turn of the century great power warfare, Mahan (in two separate respects), Schlieffen, Corbett, MacKinder, and Fisher. We saw that adherents of Mahanian strategy, including Mahan, focused on the preëminent role of sea power, the quest for the decisive battle at sea with unified fleets, and the economic effects of the loss of command of the sea. Adherents of Corbett, including Corbett himself, took a more nuanced view, arguing instead for a maritime perspective, and examining the interactions between naval and military operations. They focused on the ability of the weaker fleet to deny the stronger the decisive battle, until lured out or forced out of sanctuary by military operations. The strongest ocean going navy could be find itself unable to precipitate its own victory due to military circumstances and the actions of the weaker fleet. The worst thing that a commander enjoying a superior position could do, according to

⁸⁰³ Theoretically, in the absence of a culturally defined set of beliefs, they could also be free to align with bureaucratic interest predictions. However empirically they did not demonstrate such behavior.

Corbett, was to recklessly risk the fleet in search of decisive battle and thus jeopardize the war⁸⁰⁴.

MacKinder and his adherents stressed the growing role of railroads in the projection of land power as a substitute for, and looming replacement of, sea power. They were fascinated by Russia's ability to move armies using a weak rail net (or rather a single rail line), the trans-Siberian railway. With a stronger rail net, they argued, maneuver would be facilitated and counter concentration could crush any maritime supported landing. They also stressed the ability of states to generate resources and strategic positional advantages from controlling land, not sea lanes.

Schlieffen was the dominant personality in the German Army, and represents one case where the power of the idea almost completely overlaps with national identity. He stressed iron willpower in commanders, and obedience in soldiers. His overriding cognitive analogy was the encirclement at Cannae. He and his followers saw in every military operation at any scale, the ability to achieve a Cannae, with the opportunity either seized or ignored by the belligerents. Tactics were largely ignored, though his concept of command and control necessitated relatively close order formations, and rejected *auftragstaktik*. The *Official Account* focused almost exclusively on Schlieffen's operational level view of envelopment, and only briefly noted that the Japanese adhered to German tactical regulation (a note at variance with other most observers), without getting into detail. Even those German generals who dissented from Schlieffen on the Russo-Japanese War were already on record as dissenters

⁸⁰⁴ It should be noted that Corbett was the one dissenter from the otherwise unanimous belief that commander should be bold, rather than cautious.

from Schlieffen's approach, most notably about the possibility of encirclement without first achieving a breakthrough. In their arguments these dissenters drew lessons that were consistent with their previously stated beliefs about breakthrough, cavalry, and assault tactics. The observers from other militaries examined, lacking the dominant force of Schlieffen to either agree with, or react against, did not demonstrate such pathologies, and instead tended to come to broad convergence about tactical issues.

Finally, we had a transatlantic debate among naval officers about capital ship design and tactics. Mahan, Sir Reginald Custance, Sir William White, and Sir Cyprian Bridge figured prominently on one side, arguing for multiple ships of limited size, mixed armament, and without emphasizing speed, with the objective of terrifying crew and disrupting the formations of the enemy. Sir John Fisher, Sir Reginald Bacon, and Commander William Sims were on the other side, arguing for a few very large and fast ships carrying guns of single heavy caliber striving to sink enemy ships in gun battles. Adherence to one of these two positions, implicitly or explicitly, largely explained the decisions drawn about the battles of Tsushima, Ulsan, and the Yellow Sea. Most notable was that, just as in the case with Schlieffen's adherents, the observers and commentators either accepted or rejected the entire system. By knowing their beliefs about any one issue it was possible to predict their views on all of the other issues.

The relatively high level of explanatory success of the ideational approach, when coupled with the weak performance of the other three, support the contention that ideational is the most fruitful research program for further inquiry. In particular, the very poor performance of the bureaucratic interest based approach stands out.

On Metrics

Running through the discussion above was the issue of analytic metrics. One pattern that was noticed repeatedly was that there were very few disagreements on points of fact between eye witnesses. Indeed, the only three noted are the degree of Japanese conformance with German infantry assault regulation, the suitability of the ground in Manchuria for cavalry operations, and the track of the Russian fleet during the opening phase of Tsushima. The remaining differences are differences in interpretation, and these fall into two groups.

First, people agree about metrics, but disagree about what these metrics mean. The classic operations research anecdote about World War Two bomber damage is an example⁸⁰⁵. When the US Army Air Corps looked to add armor plate to bombers, they first inspected damaged aircraft, planning to put armor plate in areas where there was a lot damage. The Operations Research staff objected, pointing out that planes that returned home damaged, had in fact returned home. Instead areas where there was no damage were the most vital areas, for no plane that had been damaged in those areas had returned to base. In the same manner, we noticed observers disagreeing about the interpretation of the casualty reports at Nan-shan and Liao-yang, while agreeing on the actual figures. Just as analysts agreed about where the damage was to aircraft, so too did observers agree about the casualties inflicted on both sides. Yet, just like the operations researchers and other air force officers, these observers took the same casualty data and arrived at different conclusions. Some argued that

⁸⁰⁵ See James G. Roche and Barry Watts "Choosing Analytic Measures," *Journal of Strategic Studies* 14:2 (June 1991) pages 165-209.

the low level of casualties of artillery was proof of its ineffectiveness, while others noted that artillery's purpose was not to kill, but to suppress the enemy and thus facilitate the movement of friendly maneuver units.

Second, people chose specific analytical measures that suited their own preconceived approach. Mahan and Custance believed in the moral effect of volume of fire. They examined the respective broadsides of the fleets at Tsushima, and noted that the Japanese had an inferiority of heavy guns, and a superiority in medium guns. They also saw that the battle included long periods of parallel engagements, where the broadsides were in action. This confirmed their suspicions, and they cited the data accordingly. Sims, however, looked at the ability of the Japanese to concentrate, and by recalculating the courses of the respective fleets, was able to deduce that the critical damage was caused at times when the Japanese achieved local superiority in heavy guns while crossing the **T** and concentrating on the lead Russian ships, sinking them. Furthermore, they argued that ships that dropped out of line early on were already in sinking condition due to the effects of heavy gunfire. Subsequent medium caliber gunfire, which may have been the proximate cause of their sinking, served only to accelerate the rate at which the ships sank and to reduce the number of survivors. The theory that these analysts brought to the problem conditioned their search for metrics.

This connection between analytic measures, which reek of a scientific approach, and constructivist influences should give pause to those who place faith in numbers, and seek to manage by metrics. Even if metrics are not themselves intentionally “gamed”, the conceptual approach that we bring to a problem—those underlying cause-effect relationships

which govern how we believe that the world operates –will undermine our ability to pick neutral metrics (if, indeed, there are such things). Unlike Johnson and Tierney, who stress the ability and incentives of elites to manipulate the cognitive environment of the masses, and thus “match fix”, this is a case of the ideational power of culturally shared ideas to implicitly affect the choice and interpretation of metrics⁸⁰⁶. By picking metrics that we already believe to be important, we often discover relationships and place undue confidence in what we discover. Mahan and Custance were very sure that counting broadsides was the correct metric. History has shown them, in this instance, to have been wrong⁸⁰⁷. Yet in the parallel debate about armoring and speed they were correct⁸⁰⁸.

⁸⁰⁶ Dominic D. P. Johnson and Dominic Tierney, *Failing to Win: Perceptions of Victory and Defeat in International Politics* (Harvard University Press, 2006). Cognitive phenomena are deliberately harnessed (or ignored out of foolishness) by policymakers to enable mass perception manipulation in their model.

⁸⁰⁷ The all big gun battleship became demonstrably superior during the first half of the twentieth century as continued advances in rangefinding, targeting, metallurgy, and chemistry improved the capabilities of big guns.

⁸⁰⁸ Mahan, Custance, Bridge, White, and their supports do appear to have been right about the inherent problems of the high speed long ranged lightly armoured fast cruiser, or battlecruiser. This experimental class of ship was often unable to maintain its range superiority, despite its marginally superior speed. Battlecruisers needed to close ranges and needed to drop speeds for tactical expediency, and in closing and slowing they exposed themselves to the fire of better armored vessels. Three of these ships, including *Invincible* herself, catastrophically failed at Jutland, and a fourth, *Lion*, very nearly did as well. In the Second World War the *Invincible*'s successor, *Hood*, was also destroyed by plunging fire from *Bismarck* and *Prinz Eugen*. As Lambert has shown, the *Invincible*, not the *Dreadnought*, was the pure version of Fisher's naval vision. Nicholas A. Lambert, *Sir John Fisher's Naval Revolution* (University of South Carolina Press, 1999).

Directions for Further Research

There are three directions for future research raised by this synthesis. Two pertain to expanding and further testing the case built here, and a third deals with answering a broader, and ultimately more important, set of questions.

First, as noted, the ideational theory would predict that the French would be dissenters on the issue of direct versus indirect fire, due specifically to the influence of Langlois and his concept of rapid direct fire support by the famous French 75⁸⁰⁹. It also predicts that the French would break with the English and Americans on the issue of torpedo effectiveness, perhaps by stressing the immaturity of the Whitehead torpedo in 1904. There are simply not enough English translations (or even available French language) documents on this subject from which to draw conclusions. A further investigation of archived documents not put into general circulation would be illuminating.

Second, the whole issue of cavalry remains problematic. It would seem to be that a case could be made that cavalry had developed its own distinct culture. Such a culture would be defined by a shared set of ideas, causal mechanisms linking the “terror of cold steel” with the breaking of morale, and shared analogies going back to the Napoleonic war. Much as there were transnational naval cultures, functioning like epistemic communities, it might be appropriate to look at Cavalry the same way. The writings of commentators, such as von

⁸⁰⁹ I thank Captain Mark Davidson, USN, for bringing the French 75 to my attention during my research and reminding me of its importance.

Bernhardi, French, “Asiaticus”, and Orton, showed a tremendous international cross fertilization.

Certainly there were shared cognitive effects among cavalrymen that were not shared among others, notably the perception that ground was bad for cavalry. There was also the persistent discussion of an important cavalry action at the Sha-ho, one that nobody else seems to have heard about, noted, or commented on (including modern historians), and one in which nobody, including the cavalrymen who raved about it, was sure about what exactly happened. This could be further tested and refined, and if correct, would suggest another transnational culture, similar to the naval cultures pertaining to capital ship design.

The final issue is perhaps the most important issue. In instances where there was no culture distorting the learning process, the observers made some really powerful observations that quite tragically were never translated into doctrine. When given correct data, why did the militaries fail to implement improvements? Why did *individual people* fail to implement improvements? General Sir Ian Hamilton sagely noted the importance of combined arms, the lethality of modern firepower, and quite wittily skewered those who held obsolete and contrary opinions. Yet when put in command of Allied forces at Gallipoli, he proved as much of a “donkey” as the tragically retrograde General Sir John French or Marshall Sir Douglas Haig⁸¹⁰. We have some examples of individuals who *did* implement what they saw. On 1 July, 1913, at the Somme Captain Jardine, now a Brigadier General, pushed his men forward directly behind the barrage. Alone among his colleagues, he achieved his objectives

⁸¹⁰ Alan Clark, *The Donkeys* (original 1961, reprinted Pimlico 1991).

in overrunning the Leipzig Salient portion of the German line.⁸¹¹ He explicitly acknowledged the influence of his Russo-Japanese War observations in the discussion with the overall commander, General Sir Henry Rawlinson⁸¹². While Pershing and March also did well commanding the American Army in the First World War, certainly having the ability to observe 3 years of trench warfare could have been just as import as a few months in Manchuria, and arriving at a point when the other belligerents had figured out how to restore mobility to the battlefield also may have played a role.

The larger question, then, is why, despite noting strongly the importance of combined arms and limited aims offensives, did the world go to war in 1914 with terrible tactical doctrine. Germany might be explained given the power of Schlieffen's ideas and the denigration of tactics. Britain, seemingly can not, as there was no paradigmatic force in British tactics⁸¹³. This is an important question, and one that these results do not directly address. I can, however, show that these lessons were made available and circulated among policymakers, repeatedly and pointedly, in the reports sent back by the observers and in the flourishing professional literature.

What I have been able to show is that the presentation and interpretation of evidence is shaped by the influence of powerful ideas, or paradigms. In the analysis of the Russo-

⁸¹¹ Major Archibald. F. Becke, "The Coming of the Creeping Barrage," *Journal of the Royal Artillery* 58:1 (1931); Jonathan B. A. Bailey, *Field Artillery and Firepower* (Military Press/ Taylor and Francis 1989) page 137.

⁸¹² Dobson, Sebastian. "Introduction," *The Russo-Japanese War, Reports from the Officers Attached to the Japanese Forces in the Field 1905-1906* (Ganesha Publishing, 2000) pages v-lxii.

Japanese War the debate rarely turned on points of fact (such as the number of heavy guns available to both sides at Tsushima, or the number of people killed at Nan-shan) but instead became about the interpretation of these facts within a larger ideational construct. These ideas were shared across time, distance, organizations, and nationalities. It was also shown that these ideas are analytically and empirically distinct from organizational ideas. Military officers often departed from predictions derived from organizational interest. They drew conclusions that didn't support augmenting either their resources or their autonomy.

I began my introduction with a quotation from Warren Buffett, who in a very different context said that “forecasts may tell you a great deal about the forecaster; they tell you nothing about the future”⁸¹⁴. I have shown that they do indeed tell us a lot about the ideas of the forecaster. But perhaps Mr. Buffett is being too pessimistic. The forecasts may provide insight into how actions will be explained by the *forecaster* in the future. From the positions and analysis that was generated during the Russo-Japanese War, we did learn a great deal about the power of ideas among those analysts who were trying to forecast the future of warfare. These ideas, which so dramatically influence the drawing of conclusions from empirical data, may offer clues to understanding policy change. In many cases the individuals who were drawing lessons from the Russo-Japanese War experience were policymakers or advisors. Others became influential as their career progressed.

⁸¹³ Paddy Griffith, *Battle Tactics of the Western Front: The British Army's Art of Attack, 1916-18* (Yale University Press, 1998), Martin Samuels, *Command or Control? Command, Training, and Tactics in the British and German Armies: 1888-1918* (Frank Cass, 1995).

⁸¹⁴ Warren Buffett, “1980 Annual Report to Shareholders” (Berkshire Hathaway Incorporated, 1981)

But only some of the lessons drawn from the Russo-Japanese War became policy. Perhaps this was due to the actual way that policies are formulated. This causes us to ask whether ideas dominate individual preferences for policy making as much as they dominate individual learning. There is certainly empirical evidence to suggest that policy is the result of competing ideas, not interests⁸¹⁵. But if the competition between ideas is what is really the important driver behind policy, then one cannot help but wonder whether learning is really necessary for understanding policy choice.

One also cannot help but feel pessimistic about the ability of individuals to learn anything, except about things that are genuinely new. After the Russo-Japanese War, adherents to the rival Mahan and Fisher ideas both found empirical support for their theory among the wreckage of Russia's fleet. But in other areas, where the contending ideas did not have strong positions, we did see Bayesian behavior. People converged on conclusions about mines and surface fired torpedoes.

Finally, one has to be skeptical of the use of empirical data. While data themselves are rarely constructed, the interpretation of those data, and the implied cause and effect relationships in which the data are framed, are constructed. Ultimately, drawing a lesson, even one supported by empirical evidence, isn't always enough to result in policy change. What I have argued is that the ideational approach, drawing on cognitive microfoundations, has a lot of explanatory power for understanding how individuals draw conclusions from data. The

⁸¹⁵ Edward Rhodes, "Sea Change: Interest-Based vs. Cultural-Cognitive Accounts of Strategic Choice in the 1890s," *Security Studies* 5:4 (Summer 1996) pages 73-124, D. Michael Shafer, *Deadly Paradigms: The Failure of US Counterinsurgency Policy* (Princeton University Press, 1988).

question then becomes, how do individuals, armed with these ideas, conclusions, and empirical support, affect change in policy.

Appendix: The Key Events and Chronology of the Russo-Japanese War

“Neither my limited observation of operations on a large scale in the field nor my instructions call for a dissertation on the subject of strategy”⁸¹⁶

In order to assist the reader in their analysis of the evidence, I have provided below a brief sketch of the major military events during the Russo Japanese War. Unless absolutely germane to the discussion within the dissertation chapters, I do not explain the context, geography, order of battle, or personalities within the engagements. This guide provides the broader context of the naval and military events of the Russo-Japanese War.

Throughout the text I have left spellings within quotations as they appeared in the original texts from which the citations have been taken. As these are translations of Russian, Japanese, and Chinese names the spelling often varies. Most of these spellings should be relatively obvious phonetic variations, but in some instances, notably the battle fought on 14-15 June 1904, which is known variously as Wa-fang-gou and Te-li-Ssu [sic], the similarity is not obvious, and so I have used footnotes for clarification.

Some Chinese place names are descriptive, and are used within the primary sources in their descriptive sense. The word “ho” means river, so the battle of the Sha-ho is the battle of the Sha River, an army will cross the “Hun-ho”, but not “Hun-ho river”. The word “tung” means peninsula, so one will read about the Liao-tung, meaning the Liao peninsula.

⁸¹⁶ Lieutenant-Colonel Edward J. McClelland report, United States War Department: Office of the Chief of Staff (Military Information Division) *Reports of Military Observers Attached to the Armies in*

Russian War Plans

Russian plans, drawn up by General Kuropatkin, called for a withdrawal towards Mukden, where the Manchurian army would be augmented by reinforcements arriving from Russia. Port Arthur was to hold out as an independent fortress. At Mukden the Russians would assume the offensive.

The Russian Pacific Fleet was based in Port Arthur, with detachments in Chemulpo (Inchon) Korea and Vladivostok. In the event of war the fleets in Vladivostok and Chemulpo were to engage in attacks against Japanese commercial shipping while the Port Arthur fleet would screen the coast against a Japanese landing. Port Arthur was the fortified base closest to the theater of operations. Vladivostok was a more secure port, but it iced over during the winter, making sorties complicated. Chemulpo was isolated and unfortified, but believed by the Russians to be important in keeping Korea officially neutral.

Japanese War Plans

Japanese plans, drawn up by Marshal Oyama and his staff, called for a disarming naval torpedo strike against the fleets in Port Arthur and Chemulpo before the declaration of war. With the Russian fleet presumably sunk, the Japanese could land in Korea and advance up to and across the Yalu. Upon crossing the Yalu they would rendezvous with a Japanese army landed directly in Manchuria, and proceed to the strategic rail junction of Liao-yang, thus isolating Port Arthur and splitting the Russian position, and hopefully destroying most of the Russian army at the Liao-yang battle. Port Arthur would be placed under siege, with the

primary objective of destroying whatever remained of the Russian Pacific Fleet and ensuring that any naval reinforcements would have no safe harbor.

Possession of Manchuria accomplished with Russia disarmed in the East, Japan would negotiate with the Russians for control of Korea, Port Arthur, the commercial port of Dalny, a sphere of influence in Manchuria, and a war indemnity.

8-9 February 1904 Japanese Naval Attacks

Without a declaration of war the Japanese launched a torpedo attack at the Russian fleet in Port Arthur, under Admiral Stark. They succeeded in damaging two battleships, but most of the fleet was undamaged. At the neutral harbor of Chemulpo they surrounded the Russians with a superior detachment. The Russians attempted to flee, were caught, and scuttled their two ships, the cruiser *Varyag* and the gunboat *Korieta*.

13 April 1904 Sinking of the *Petropavlovsk*

The Russian Port Arthur Fleet, now under the command of Admiral Makarov quickly made repairs and began disrupting Japanese mining efforts outside the harbor and threatening to sail against the Japanese fleet. During one pursuit of Japanese destroyers, the battleship *Petropavlovsk*, flagship of Admiral Makarov, hit a mine and sank, taking most of her officers and crew, including the admiral, with her.

25 April-2May 1904

Battle of the Yalu

Japanese forces crossed the Yalu river separating Korea from China. Russian troops under the command of General Zassulich failed to block the Japanese crossing.

15-16 May 1904

Sinking of *Hatsuse*, *Yashima*, and *Yoshino*

Whether by accident or design Russian mines outside of Port Arthur began to break loose from their moorings, drifting in the sea. The battleships *Hatsuse* and *Yashima* were both struck by mines and sank. A night before, on 15 May, the cruiser *Yoshino* was rammed by the Japanese cruiser *Kasuga* in dense fog, and she sank early on the morning of the 16th. Losses on all three ships were heavy.

25-26 May 1904

Battle of Nan-shan

Two Russian regiments detached under Colonel Tretyakov occupied the Nan-shan isthmus, separating the Liao Tung peninsula, which included Port Arthur and the unfortified port of Dalny, from the rest of Manchuria. The Russians were supported by the gunboat *Bobr* operating on the eastern side of the isthmus. The Japanese 2nd Army, under General Oku, launched a series of frontal assaults supported by four gunboats operating on the western side of the isthmus. General Stoessel, in charge of the garrison at Port Arthur, refused to reinforce Tretyakov and the Russians were forced to fall back to the fortress.

14-15 June 1904

Battle of Te-Li-Ssu / Wa-fang-gou

Under pressure from Alexieff, Kuropatkin launches an early counterattack against Oku's 2nd Army involving General Gerngross and General Simonov, both of whom reported to General Stakelberg. Gerngross attacked and met with initial success. However he was

unsupported by Simonov and forced to fall back. Simonov then launched a half hearted attack, and was also defeated.

10 August 1904

Battle of the Yellow Sea

The Russian Pacific Fleet, now under the command of Admiral Vitgeft, attempted to break out from Port Arthur and affect a junction with the Vladivostok cruiser detachment. The Japanese fleet, under Admiral Togo, caught the Russians. Admiral Vitgeft was killed when a Japanese shell hit the bridge of his flagship, the *Tsesarevitch*. The shell also killed the helmsman, who slumped over the wheel, and put the ship in a circle in front of the Japanese fleet. The Russian fleet followed this maneuver, and came under intense Japanese fire before other Russian ships began to suspect a problem aboard *Tsesarevitch*. The Russian fleet scattered, with most ships, including the damaged flagship, making their way back to Port Arthur, while a few escaped south to internment in neutral ports.

14 August 1904

Battle of Ulsan

The Russian Vladivostok detachment, under Admiral Yessen, had sortied to meet with Vitgeft's ill fated attempt to break out. After the outbreak of war this detachment had met with some success in their commerce raiding efforts, notably destroying a Japanese transport loaded with heavy artillery destined for Port Arthur. This caused the Japanese to detach a cruiser force under Admiral Kamimura with orders to engage and sink Yessen's smaller squadron. These forces met on 14 August. The Japanese damaged the *Rurik*, the oldest and slowest ship in the Russian squadron. The Japanese concentrated on the crippled ship, eventually sinking her, while Yessen's two other cruisers escaped back to Vladivostok.

26 August-3 September 1904 **Battle of Liao-yang**

The Battle of Liao-yang was the climax of the Liao-yang campaign, which included all operations following the crossing of the Yalu. At Liao-yang the 2nd Japanese Army under Oku and the 1st Japanese Army under Kuroki attempted to link up. They were supported by the smaller 4th Army under Nozu. The Japanese were under the overall command of Marshall Oyama. Between these converging forces sat a Russian Army under the command of Kuropatkin himself. Throughout August the Japanese attacked the Russians, who inflicted casualties and did not yield ground. Fighting was concentrated south of Liao-yang and on the Manju-yama hill to the east. On 31 August Kuroki split his forces astride the Taitzu River, exposing them to defeat in detail. His Guards Division was fought to the breaking point, and failed to resume offensive action despite orders. On 2 August the Manju-yama hill fell to the Japanese, and a Russian local counterattack in the vicinity of Manju-yama led by General Orlov was obliterated. The Japanese were unable to advance further, but following the rout of Orlov, Kuropatkin ordered a general withdrawal from the Liao-yang position.

11-17 October, 1904 **Battle of the Sha-ho**

Again pushed to take the offensive in order to affect the relief of Port Arthur, Kuropatkin ordered armies led by General Bilderling and General Stakelberg to attack the Japanese north of Liao-yang. After some initial success the Japanese counterattacked and pushed the Russians back to the Sha-ho. There the Russians were able to cross the river and move north to Mukden, while the Japanese remained south of the river.

26 May 1904 - 2 January 1905 **Siege of Port Arthur**

The Japanese 3rd Army under General Nogi laid siege to the Russian forces in Port Arthur. Russian command was unclear, as there were naval forces under the Admirals (Makarov and Vitgeft), General Stoessel who commanded the garrison itself, and General Kondratenko, who commanded the Army within the fortress. Stoessel had overall responsibility. Repeated Japanese efforts to storm the fortifications from the north failed. Marshall Oyama sent his chief of staff to assist Nogi in designing a new approach, and to relieve Nogi if necessary. Nogi complied with the new plan, and in November changed the attack to be against the unfortified 203 Meter Hill, attacking from the west. Russian defense of 203 Meter Hill was put under the command of Tretyakov, who resisted the Japanese tenaciously. In some occasions the fighting degenerated into soldiers hurling rocks at each other when ammunition supplies gave out and artillery fire prevented resupply. The hill changed hands numerous times, but by early December 1904 it fell firmly into the possession of the Japanese. From the hill the Japanese were able to effectively spot for their artillery, and the Russian fleet in Port Arthur was bombarded, with most ships sunk or scuttled. As they sank upright in the harbor, the Japanese were able to refloat and salvage the battleships. Captain Von Essen, with the Russian battleship *Sevastopol*, was able to escape the bombardment, but was not able to break the blockade. He moored in a cove protected by a gunboat and fought off repeated torpedo attacks. On 15 December 1904 Kontradenko was killed by Japanese artillery. 1 on January Stoessel began negotiations to surrender the fortress, which were completed on 2 January. Von Essen capsized his ship while scuttling her, to make it unsalvageable to the Japanese. Immediately following the surrender, most of Nogi's 3rd

Army was sent north to join Oyama's army group preparing for a spring offensive against the Russians near Mukden.

11-12 January, 1905

Mishchenko's Raid

Seven thousand of the Russian cavalry were gathered under General Mishchenko and directed to raid the Japanese forces in Manchuria, cut supply lines, burn depots, blow up bridges, delay Nogi's redeployment, and destroy isolated detachments. However the raid was almost immediately stopped by a handful of Japanese infantry that had fortified a train station, and the cavalry return to the Russian lines, neither suffering nor inflicting meaningful loss.

25-29 January, 1905

Battle of San-de-pu

Russian troops under General Gripenberg, fearing the arrival of the 3rd Japanese Army freed up by the fall of Port Arthur, launched a winter counterattack during a snow storm against Oyama's Army Group. This attack gained ground, but Gripenberg's losses were heavy, and he could not take the town of San-de-pu, which would have allowed his forces to affect a junction with those under General Kaulbars. Kuropatkin ordered an end to the attack and had Gripenberg withdraw towards Mukden, which was being fortified. Gripenberg resigned his commission and traveled back to Russia, where he became a vocal public critic of Kuropatkin's handling of the war.

19 February-10 March, 1905

Battle of Mukden

Russian troops under Kuropatkin were organized into three armies, deployed west to east under Generals Kaulbars, Bildering, and Linievitch and a cavalry division under General

Rennenkampf. The now entirely united Japanese army group, including a newly constituted Army of the Yalu under General Kawamura, pressed the Russian position. The Russians gave ground gradually, extracting heavy Japanese casualties. However General Nogi's 3rd Army managed to get around the flank of Kaulbars, while Kawamura passed through Rennenkampf's cavalry unmolested. The orderly Russian retreat turned into a route, with Kaulbars and Linievitch both being nearly encircled, and Bilderling in the center having to cede ground without fighting in order to keep pace with the crumbling armies on either side. Abandoning Mukden, the Russians retreated northward. There they were able to refortify their position, and were joined by more reinforcements throughout the spring and summer of 1905. However no major battles were fought in Manchuria before the end of the war in September 1905.

28 May 1905

Battle of Tsushima

The Russian Baltic Fleet was dispatched to reinforce the Pacific Fleet. Under Admiral Rozhdestvensky the fleet sailed around the horn of Africa, through the Indian Ocean, past Vietnam, and towards Port Arthur. Early in this voyage the Russians opened fire and sank British fishing boats in the North Sea, after mistaking them for Japanese torpedo boats preparing an ambush. This nearly provoked war with Britain. After the fall of Port Arthur the fleet adjusted their goal from Port Arthur to Vladivostok, which would involve passing around Japan before the fleet could enter port. By the time the fleet reached the area around Japan the ships were mechanically worn out from a pretty amazing feat of seamanship, and the crews were out of military practice. While passing through the Straits of Tsushima the Russians were intercepted by the Japanese, under Admiral Togo, and supported by Admiral Kamimura. The Russians were obliterated. One cruiser and two destroyers made it to

Vladivostok. A second Russian cruiser was wrecked on the coast while approaching Vladivostok. Three cruisers, a destroyer, and some unarmed auxiliary ships escaped to internment. The twelve Russian battleships (including Russia's four newest capital ships) and remaining cruisers, destroyers, and auxiliaries were sunk, scuttled, or captured (often heavily damaged). The Japanese lost three torpedo boats, and suffered damage to some ships.

Bibliography of Secondary Source Material

The bibliography below excludes primary source material on the Russo-Japanese War. The primary source materials used for the analysis are listed separately following this bibliography.

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