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JAPANESE ENERGY SECURITY AND CHANGING GLOBAL ENERGY MARKETS:  
*AN ANALYSIS OF NORTHEAST ASIAN ENERGY COOPERATION AND JAPAN'S EVOLVING  
LEADERSHIP ROLE IN THE REGION*

IN HARM'S WAY? CHINESE POWER PROJECTION  
IN HISTORICAL PERSPECTIVE

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## **Introduction**

China is clearly a major power, and has had a long series of years of significant economic growth, and while China's economy may slow its growth, there is every reason to believe that China will continue to enhance its position in Asia and throughout the world. Should this be a cause for concern? Should we view China at the turn of the 21<sup>st</sup> century as comparable to Germany at the turn of the 20<sup>th</sup> century – i.e., as a state growing more powerful that will seek to use its industrial might to build a significant ability to project power, and engage in conflictual behavior as part of a drive to achieve dominance? Or will China enhance its position, particularly in Asia, by becoming a source of stability in the region?

There are a variety of ways to examine this question. I choose to cast my gaze back in time and study the historical record. In particular, I will seek to understand how often and under what circumstances, since the end of the Napoleonic Wars, major powers seeking to increase their power projection capability have upset the status quo, and have become embroiled in serious military conflict, including war.

I begin with a quick look at the extent to which China has improved its power projection ability over the past decade. I then discuss what military tools have been used to project power in the past, concluding that historically this has been a matter of naval power. The heart of the paper is a simple quantitative study of naval arms competitions since 1816. The questions I will consider are:

- What are the results (in terms of the arms competition) of these major power naval competitions?
- Are these competitions associated with an increase in dispute involvement by the challenger?
- How likely and under what circumstances are these arms competitions likely to end in war?

I then return to compare recent changes in Chinese power projection capability with other major regional powers, consider how far the Chinese have come, and discuss

under what circumstances Chinese actions could lead to a heightened chance of regional conflict and war.<sup>1</sup>

### **Power Projection Today: the Military Tools and the Chinese Record**

What are the elements of power projection? Power projection involves the ability to use military force at a significant distance from the country's homeland. This can involve either the delivery of weapons or the ability to maintain military forces well away from the homeland. In the twenty first century, the following types of weapons systems are indicative of power projection capability:

- Intercontinental Ballistic Missiles (ICBMs).
- Submarine Launched Ballistic Missiles (SLBMs).
- Intercontinental bombers.
- High performance fighter and attack aircraft, along with the means to operate them efficiently at long range (the ability to refuel a significant number of aircraft in the air, and the airborne ability to coordinate the combat aircraft).
- One or more aircraft carriers.
- Multipurpose ocean-going surface ships.
- Nuclear powered attack submarines.
- The necessary amphibious lift to mount a significant amphibious assault.

### **The Chinese Ability to Project Power: The Last Ten Years**

I begin by looking at the Chinese ability to project power (as indicated by its possession of the types of weapons system noted above) in 1990 and the present.

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<sup>1</sup> I do *not* factor in the capability and role of the United States in the region. Suffice it to say, U.S. involvement in the region can have a significant impact on the military balance.

**Table 1**  
**Chinese Power Projection Capabilities, 1990 and 2000**

<b>Component of Power Projection Capability</b>	<b>1990</b>	<b>2000</b>
ICBMs	8	15-20
SLBMs	12	12
Intercontinental Bombers	None	None
High Performance fighter and attack aircraft, with support	No aircraft with in-flight refueling, no support aircraft	50-70 Su27 (J11), 40-80 Su30, 1 AWACS-type on order, conversion of some old bombers to tankers
Aircraft Carrier(s)	None	1 reported under construction; in service in 2010
Multipurpose ocean-going surface ships	0	8 (only 2 have marginal SAM capabilities)
Nuclear powered attack submarines	4	5
Amphibious Shipping	Ability to lift about 5800 troops	Ability to lift about 8300 troops

Sources: International Institute for Strategic Studies, 1990, 1999; Federation of American Scientists 2000a.

The Chinese power projection capability in 1990 was very modest. It had a small missile force, no ability to project power via aircraft, and only a modest capability at sea (its sub force). The following decade produced only a small increase in the ability to deliver nuclear weapons intercontinental distances (the addition of a few more ICBMs), and a modest increase in the ability to land troops through amphibious assault (although still less than a division). There has been some addition to the surface component of the navy (although only the 2 *Luhu*-class destroyers have significant multipurpose capabilities), and there are widely circulated reports that the Chinese are currently building (or will soon begin to build) an aircraft carrier; see for example, Federation of American Scientists (2000b). Finally, although the Chinese air force currently possesses a small number of modern aircraft (compare the numbers in the table above to the total of approximately 3520 combat aircraft in the Chinese air force), it is moving in the direction of adding the kinds of aircraft and capabilities necessary to project power. In fact, the Chinese have explicitly announced that they are moving in this direction (StrategyWorld, 2000).

Clearly, the Chinese have increased their ability to project military power, but this should not provoke an immediate and large-scale response. It will be some time before China has a significant power projection capability (the time frame is likely to be measured in decades), assuming it is trying to obtain one. But what if they did develop such a capability? Would they put it to use and seek to dominate the region? Would the Chinese simply dramatically increase their military capability, but not use it unless they were directly threatened?

The goal of this paper is to shed light on some of these questions by looking for historical situations comparable to the scenario of a state greatly increasing its power projection capability. I will examine these situations to see if, historically, an increase in power projection capability is accompanied by an increase in conflict.

### **Power Projection in the Past: the Military Tools and the Major Powers**

To maximize the number of comparable historical situations that can be examined, I need to go back in time as far as is reasonable; I will in fact go all the way to 1816. Trying to find analogies to the current and future course of China in the region necessitates, first, that I restrict my attention to the group of countries that has had the material capability to exercise significant military, political, and economic interests beyond their borders; the group of countries that matches this profile is the major powers (Small and Singer, 1982). It is only this set of countries that has had both the opportunity and the willingness (Most and Starr, 1989) to engage in a significant attempt to dramatically increase their power projection capabilities.

As well, I need to determine what was involved in the development of power projection capabilities in the past. Power projection today can involve a number of different kinds of weapons systems, as noted above. However, for most of the time period I am examining (1816 to the late 1980s), there was only one way to project power great distances from the homeland: by building a significant navy. The reasons for this are clear if one considers the other kinds of weapons systems enumerated above.

Long-range (intercontinental) missiles did not exist until the middle 1950s. Long-range aircraft (aircraft that had both a significant range and an ability to deliver weapons that could damage or destroy significant targets) did not exist until World War II; prior to

that time, aircraft had only a limited range and could not attack targets at a significant range away from their airfields. Nuclear powered submarines did not exist before the 1950s,<sup>2</sup> and true amphibious shipping did not exist until World War II.<sup>3</sup>

However, navies are not simply the default measure of power projection. Before World War II, there was simply no way a country could exert influence at great distances from its homeland without significant naval power. Ground troops and a presence overseas could not be maintained without the protection of the lines of communications back to the country. So whether to help establish a presence overseas or to protect that presence from encroachment from other major powers, naval power was critical.

Even today, while there are other ways to project power, naval power is still an important tool for power projection. Nuclear weapons and intercontinental bombers can inflict destruction at great distances, but they cannot control an area or access to it. This requires a continual military presence. This can be done with ground troops or aircraft based in the area, but these elements still have to be protected to get to the location, and once there, their lines of communication must be safeguarded. This is the role of navies. As well, if a state wants to project power into an area, it may not be able to obtain basing rights, and be unable (or unwilling) to force its way in. In this circumstance, naval power remains the only way for a state to project power.

### **Capital Ships as a Measure of the Ability to Project Power**

This leaves the question of how best to measure naval power. Expenditures are widely used, since they appear to provide a common measure that allows for comparisons of military capability across countries, but the use of currency has a number of significant drawbacks:<sup>4</sup>

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<sup>2</sup> While conventionally powered submarines could range a considerable distance in both World Wars, and could destroy a number of targets, they were essentially surface ships that could only remain submerged for short periods of time. This is not so much of a handicap when using submarines for coastal defense (since the enemy has to come to the coast), but is a significant handicap to projecting power significant distances, which is the concern of this paper.

<sup>3</sup> Amphibious assaults took place before World War II. But prior to that war, the troops were landed from ship's boats or craft such as barges, and did not use specialized small craft that facilitated beaching, nor did they have the specialized large ships to support such an assault.

<sup>4</sup> See Bolks and Stoll, 2000 for a more complete discussion of these problems.

### **In Harm's Way? Chinese Power Projection in Historical Perspective**

- Use of expenditures does not take into account that some countries rely on (and pay for) a professional military, while others rely extensively on conscription; comparison of expenditures of states with different personnel policies can be misleading.
- States do not all have the same concept of what is properly to be considered military expenditures. For example, some states may include pension costs in their military budget, while others may not. Consider another example: the budgetary allocation for the nuclear weapons of the United States (bombs and warheads) is actually in the Department of Energy budget.
- There can be significant difficulties in comparing expenses across different economic systems (for example, free market versus socialist economies); as well, different countries have very different policies about subsidizing defense industries. These policies may result in vastly different costs (as expressed in the military budget) for very similar weapons systems.
- States may deliberately conceal a portion of their defense expenditures. During the Cold War, many efforts were made to create a more accurate estimate of Soviet military expenditures (very few people believed the official figure given by the Soviet government).<sup>5</sup>

Because of these problems, I choose to use the count of *capital ships* as a measure of naval power and the ability to project military power significant distances. Although the specific type of ship that constitutes a capital ship changes through time, the concept is simple: it is the type of naval vessel that is the most effective in combat. This ship type is the focal point of naval power. Large navies contain a variety of ship types, but non-capital ships are typically used for independent secondary tasks and/or to help screen (protect) the capital ships. When a battle is joined, it is the capital ships on both sides that have the biggest impact on which side wins or loses. Therefore, if one wants to

measure naval power projection, the best indicator is the number of capital ships in the navy, and the best way to compare the relative naval strengths of major power navies is to compare the number of capital ships each possesses.

I believe that tracing arms competitions that involve major power navies from 1816 to the present will help to establish a baseline for evaluating whether the acquisition of a significant power projection capability by China is likely to lead to conflict in Asia.

### **Power Projection, Arms Competitions, and Conflictual Behavior**

Almost by definition, if one major power seeks to significantly improve its naval capability (i.e., power projection capability), this will attract the attention and concern of one or more of the other major powers. In a general way, major powers are always paying some attention to each other; they interact together on a regular basis, and form a set of powerful peers and rivals. In the words of one of the best classical writers on the balance of power, the major powers are “jealously independent” (Gulick, 1955: 4).<sup>6</sup>

Given that the major powers pay close attention to one another, then a concerted effort by one to increase its naval power vis-à-vis another major power is likely to provoke a reaction from the other major power. The most obvious form of reaction is that the other major power begins to increase its own navy, creating a two-way arms competition.

If this were the only kind of reaction, then although these situations would produce waste (resources spent on navies rather than other uses), this would not create a serious international problem. But there are other possibilities as well. While some argue that tensions lead to arms races, and others see the causality running in the opposite direction (Singer, 1958), it seems clear that if two states engage in an arms competition, it is likely that this will be associated with a high level of tension between them. The combined effect of high tension and mutual suspicion can lead to a situation in which the two states begin to take other aggressive moves against one another, producing a series of

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<sup>5</sup> The notion that countries deliberately conceal a significant proportion of their expenditures did not end with the demise of the Soviet Union. Bernstein and Munro (1997) argue that the real level of Chinese military expenditures is ten times higher than the officially reported figure.



open and armed conflicts. That is, the arms competition may not be “the cause” of conflict, but it nevertheless may be strongly associated with an increase in conflict. Finally, some observers believe that when two states engage in an arms competition, it can culminate in a war.

### **Challengers, Arms Competitions, and Conflict**

Let me call the initially smaller state the *challenger*, and the state against which the challenger seeks to improve its position, the *target*. If a state acts to increase its naval capability, then it seems likely that it will try to assert itself internationally in other ways as well – against the target state and perhaps other states. Thus, it seems plausible to expect that a naval competition will be associated with an increase in the conflict involvement of the challenger.

Can something more specific be said about the relationship between challenging and conflict? The challenger, by definition, begins the arms competition in a weaker position than the other state. If we compare the relative standings of two navies at the end of the competition, then one of three conditions can exist:

- The challenger *did not improve* its position vis-à-vis the other state in the arms competition.
- The challenger *improved* its position vis-à-vis the other state in the arms competition.
- The challenger *surpassed* the other state in the arms competition.

It seems plausible to assume that the more successful the challenger, the more the challenger will assert itself internationally, and therefore the more the challenger will be involved in conflict. Additionally, this line of reasoning leads to the conclusion that arms competitions in which the challenger surpasses its opponent are the most likely to end in war.

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<sup>6</sup> The same phrase, “jealously independent,” can be applied to the powerful states in a region; another reason I believe that a study of the major powers from the past can be useful to understanding China and Asia in the present.

## Major Powers, Capital Ships, and Arms Competitions

To identify the major power competitions it is first necessary to identify the states that are to be considered major powers. The standard identification of these states considered to be major powers is by Small and Singer (1982). Table 2 shows the states and the years between 1816 and 1986 that each was considered to be a major power.

**Table 2**  
**Major Powers, 1816 to 1986**

<b>Country</b>	<b>Years as a Major Power</b>
United States	1898-1986
Great Britain	1816-1986
France	1816-1940, 1945-1986
Prussia/Germany	1816-1918, 1925-1945
Austria-Hungary	1816-1918
Italy	1860-1943
Russia/Soviet Union	1816-1917, 1922-1986
China	1950-1986
Japan	1895-1945

I rely on Modelski and Thompson (1988) for data on capital ships. Understandably, with changes in technology, what constitutes a capital ship also changes. A more extensive discussion of these issues can be found in their book. From 1816 through World War II, the capital ship evolved from a sailing ship with a large number of cannons, to a steam powered ironclad warship, to a dreadnought-type battleship, then to an aircraft carrier. In the post-World War II era, capital ships are considered to be both aircraft carriers and nuclear-powered attack submarines.<sup>7</sup>

To identify the naval arms competitions, I rely on Bolks and Stoll (2000). Since the identification of arms competitions from empirical patterns is extremely difficult,<sup>8</sup> naval competitions were identified by consulting a variety of historical sources. This paper contains an appendix that lists the competitions and the sources used to identify

<sup>7</sup> Modelski and Thompson also consider submarines capable of launching ballistic missiles as a third type of capital ship. But I believe these vessels are more properly considered part of a country's nuclear arsenal, not its conventional naval forces.

<sup>8</sup> Consider 2 pairs of countries, pair 1 with countries A and B, and pair 2 with countries C and D, with each pair undergoing its own arms competition. If that were the case, then we would expect to see a graph with a sharp upward curve for A and B, and a similar graph with a sharp upward curve for C and D. But if we swap one country in each pair, and plot A versus C, and B versus D, these graphs would also look like arms competitions.

them. For each major power, the naval competitions in which it engaged are listed. A comparison across the major powers shows that some competitions were two way (major power A was engaged in a competition with major power B, and vice versa), while others were one way (major power A sized its navy to that of major power B, but major power B did not size its navy to that of major power A). In most one way competitions, the state engaged in the competition had the initially smaller navy. That is, the state was monitoring the naval developments of one or more other target states, and seeking to improve its position versus the target(s). But there are also instances in which the state in the competition was actually the stronger navy, and sought to maintain or increase its lead over the challenger(s). For example, from 1816 to 1854, Britain (although it had the world's largest navy) made its construction decisions based on the size of the second largest navy in the world.

Finally, as noted above, I categorize naval competitions as ending in one of three ways (note: I am talking about the naval competition itself, not its impact on conflict, which will be explored below). First, the challenger (the state with the initially smaller navy) can *fail to improve* its position vis-à-vis the navy it is challenging; at the end of the arms competition, the ratio of the challenger's capital ships to the number of capital ships of the target state is no better than it was at the beginning of the competition. Second, the challenger can *close the gap* with the navy it is challenging; at the end of the competition, the challenger to target ratio has changed so that it is less adverse than it was at the start of the competition. Finally, the challenger can *surpass* the navy it is challenging. The challenger begins with a navy (i.e., a number of capital ships) that is smaller than the target, but at the end of the competition, the challenger has more capital ships than the target.

## **Arms Competitions and Conflict**

Given that an arms competition (one-way or two-way) takes place, an important question is whether these competitions are associated with an increase in the amount of conflict. There are a variety of conflictual interactions that can be dangerous and costly. A particularly important form of sub-war conflict is the dispute; more formally, the

militarized interstate dispute.<sup>9</sup> These conflicts involve the threat or use of military force, even to the point of sporadic conflict. History is dotted with accounts of these situations, some of which were ended short of war (such as the Cuban Missile Crisis), and others of which did not (such as the crisis which began with the assassination of the heir to the throne of Austria-Hungary, and ended in World War I). So, the first question of concern is whether the challenger state experiences an increase in militarized interstate dispute involvement while it is engaged in an arms competition.

The most dangerous form of conflict that can be associated with an arms competition is a war. Many observers feel that this can happen because of the mutual suspicion and tension that is either created or exacerbated by an intense arms competition. Returning to the current situation in Asia, we have three countries with a declared nuclear capability (China, India, and Pakistan), with a fourth nuclear power (Russia) that borders on the region, and several other countries that either have or could quickly develop a nuclear capability (the Koreans).<sup>10</sup> Even if we assume the United States would remain uninvolved in a war in Asia (this appears to be unlikely), the presence of all these other nuclear powers makes the prospect of a war arising out of an arms race a particularly dangerous prospect. To investigate the historical linkage between arms competitions and war, I rely on the definition of war (and the list of wars) developed by Small and Singer (1982), which is the standard source among quantitative researchers in international relations.<sup>11</sup>

### **Analysis of Historical Naval Competitions**

I begin by classifying the arms competitions in the study (see the Appendix for a complete list) according to the three way scheme noted earlier; i.e., the challenger gains no ground on the target state, the challenger closes the gap, or the challenger surpasses the target state. Table 3 shows the results of this classification. The country listed first is the country that perceived itself in an arms competition. This was usually (but not

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<sup>9</sup> Jones, Bremer, and Singer (1996) provide an in depth description of the concept of militarized interstate dispute.

<sup>10</sup> As well, some have argued that Japan is a “virtual military power” (Manning and Przystup, 1999: 49).

<sup>11</sup> Briefly and informally, an interstate war involves sustained combat between two countries. The criterion for sustained combat is that it produces at least 1000 battle deaths.

always) the challenger. The challenger (the initially smaller side) is denoted in the table with a "C." The unlabeled state in the pair is the target.

**Table 3**  
**The Naval Arms Competitions**

<b>State</b>	<b>Opponent</b>	<b>Years</b>	<b>Challenger Outcome</b>
Austria-Hungary(C)	Italy	1902-1914	Closes
France (C)	66% of Great Britain	1816-1850	No gain
France (C)	Great Britain	1850-1870	Closes
France (C)	Great Britain	1888-1899	No gain
France	Germany + Austria-Hungary + Italy (C)	1890-1914	Surpasses
Italy (C)	France	1870-1878	Closes
Italy	Austria-Hungary (C)	1879-1900	No gain
Japan (C)	70% of Russia	1902-1904	No gain
Japan (C)	United States	1907-1941	Close
Germany (C)	Great Britain	1898-1914	Close
Germany (C)	Great Britain	1933-1939	Close
Great Britain	Next Biggest Navy (C)	1816-1854	Close
Great Britain	Next 2 biggest navies (C)	1860-1899	No gain
Great Britain	Germany (C)	1900-1914	Close
Great Britain	United States (C)	1919-1922	Close
United States (C)	Great Britain	1898-1914	Close
United States (C)	Great Britain	1919-1922	Close
United States	Japan (C)	1922-1941	Close
United States	Soviet Union (C)	1950-1986	Surpass
Russia (C)	Great Britain – France	1885-1891	Close
Russia (C)	Great Britain	1892-1906	No gain
Russia (C)	Germany	1907-1914	No gain
Soviet Union	Germany (C)	1935-1940	Surpass
Soviet Union (C)	United States	1950-1986	Surpass

Note: the following are considered to be two way races and only one of the pair is used in the analysis: the German-British race before World War I, the U.S.-British race between the World Wars, and the Cold War race between the U.S. and the Soviet Union. Data collection ends in 1986 with the U.S.-Soviet competition still underway.

In 30 percent of the competitions, the challenger was unable to improve its position vis-à-vis the target state. About half of the time, the challenger was able to close the gap with the target, and in about 20 percent of the cases, the challenger was able to

surpass the target state. Thus, in 70 percent of the cases of great power naval arms competitions since 1816, there was at least some change in the status quo. This historical record suggests that it may be difficult to prevent challengers from achieving at least some measure of success in their drive to alter the status quo.

While it is of some concern that so many major power naval competitions result in at least some alteration of the balance of naval power, what is more critical is whether, concomitant with a naval competition, there is an increase in the amount of conflict – disputes and wars. I break this down into two questions. First, does the challenger in a naval arms competition exhibit an increase in dispute involvement (when the amount of dispute involvement is compared to that experienced by the challenger when it is not involved in a competition)? Second, are naval arms competitions likely to end in war, and if so, are the chances of war related to the course of the arms competition?

### **Naval Arms Competitions and Dispute Involvement**

Many observers would expect that arms competition would be accompanied by an increase in dispute involvement by the challenger state. The fact that the state is seeking to alter the status quo vis-à-vis another state suggests that it is seeking to assert itself regionally and/or internationally. As well, most observers would expect that the arms competition itself (even if it was caused by tensions between the two states) would increase the strain between the two countries, and this in turn would lead to an increase in lower level conflict (the possibility of war is discussed below).

To assess the degree to which arms competitions are associated with an increase in dispute involvement, I will conduct two simple analyses. In the first, I predict the challenger's number of disputes per year from two variables. The first variable represents the effect of the arms competition. The second represents a period of time for 10 years prior to the arms competition. The second variable is included to take care of the possibility that the challenger increases its dispute involvement prior to the arms competition, and that any apparent increase during the arms competition is illusory. The time period for each analysis is the number of years the challenger was a major power.<sup>12</sup>

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<sup>12</sup> Since the dependent variable in this analysis is a count (the number of disputes in a year), the analysis technique is a Poisson regression or (if the goodness of fit for the Poisson was significant indicating that the

Presenting the complete set of analyses would require a great deal of space. Instead, I present a summary of the results. Across the 24 arms competitions examined in this study, I report the number of times the coefficient for the arms competition is positive and statistically significant (indicating that the challenger increases its dispute involvement during the arms competition), negative (indicating that the challenger decreases its dispute involvement during arms competition), and the number of times the coefficient is not statistically significant. As well, these effects are broken down by the outcome of the arms competition; that the challenger did not close on the target state, that it closed the gap, and that it surpassed the target state. These results are displayed in Table 4.

**Table 4**  
**Impact of Arms Competitions on Challenger's Dispute Involvement**

Result of Arms Competition

Dispute Involvement	Challenger Fails to Close	Challenger Closes	Challenger Surpasses	Total
Decrease	3 (43%)	2 (17%)	0 (0%)	5 (21%)
No Change	3 (43%)	8 (67%)	1 (20%)	12 (50%)
Increase	1 (14%)	2 (17%)	4 (80%)	7 (29%)
Total	7	12	5	24

As you can see, in only about 30 percent of the arms competitions does the challenger significantly increase its dispute involvement (7 competitions); this is almost the same as the number of competitions associated with a significant *decrease* in the challenger's dispute involvement (5). Note there is a much greater tendency for the challenger to increase its dispute involvement if the challenger surpasses the target (and notice also that the chances of an increase are about the same whether it closes or whether it does not gain the target). Thus, the linkage between arms competition and increased dispute

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use of the Poisson is inappropriate) a negative binomial regression. Dummy variables are used to code both the arms competition variable and the variable representing the pre-competition period of time. Due to the timing of some arms competitions, the number of years' code prior to the arms competition may be less than 10. As well, the years during the two World Wars were excluded from the analysis since (a) I am not concerned with the dynamics of arms competitions during a war, and (b) both these wars were long enough to allow for the construction of a significant number of capital ships.

involvement is less than commonly assumed, except when the challenger drastically alters the status quo.<sup>13</sup>

### **Naval Arms Competitions and War**

The greatest fear about arms competitions is that they will escalate to war. As noted above, there is debate as to whether arms competitions lead to tensions, and these tensions in turn lead to war, or whether the underlying tensions between two countries lead both to arms competitions and to war. In the first instance, the arms competition can be said to have a causal role in the outbreak of war. In the second instance, the arms competition, while associated with the outbreak of war, does not play a causal role. Untangling the exact nature of the connection between tensions and armaments in an arms competition would undoubtedly be difficult since it is likely that the connection runs both ways (rather than just from one way to the other), and that will not be attempted here.

Regardless of the exact nature of the connection between tensions and armaments, it is important to investigate the link between naval arms competitions and war. If we find a strong association, this would suggest that we should have a high degree of concern about any country that appears to be moving down the path towards a significant increase in power projection capabilities. Needless to say, more work would be required to determine if the connection is causal or merely an association.<sup>14</sup>

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<sup>13</sup> I reran the analysis reported in Table 4 adding a variable to reflect the fact that throughout the period, the size of the system is basically expanding. Therefore, through time, there are more and more states with which the challenger can engage in disputes. This suggests that the “natural” tendency should be for the number of disputes to increase through time, even if the challenger is not engaged in arms competition. Specifically, I add a variable for year to each equation. When year is included, *none* of the coefficients for arms competition are significant (versus 12 in Table 4). These results suggest even less of a linkage between arms competition and challenger dispute involvement.

<sup>14</sup> The policy implications of the two possibilities are very different. If there is a causal connection, then efforts to deflect a movement towards war should be directed to slowing down or stopping the arms competition (for example, through arms control agreements). If the connection is not causal, but only an association, then it will do little good to attempt to brake the arms competition. Instead, the path towards war can only be derailed by working on the underlying tensions that caused both the arms competition and the war.



The most straightforward way to assess the linkage between arms competitions and war is to divide the competitions into the three categories noted above, and to compare the proportions of competitions in each category that end in war.<sup>15</sup> Table 5 shows comparison.

**Table 5**  
**Impact of the Type of End of the Competition on War/No War Outcome**

End of Competition				
War/No War	Challenger Fails to Close	Challenger Closes	Challenger Surpasses	Total
No War	5 (71%)	6 (60%)	1 (25%)	12 (57%)
War	2 (29%)	4 (40%)	3 (75%)	9 (43%)
Total	7	10	4	21

One must be somewhat cautious in drawing firm conclusions with such a small number of cases, but it does seem that there is little difference in the chances of war if the challenger either fails to close, or just closes the gap; the chances of a naval arms competition ending in war are between 3 in 10, and 4 in 10. However, of the four cases in which the challenger does surpass the target, three end in war.

One implication of this finding is that if the arms competition can be turned off at any point prior to the challenger passing the target, then the chances of war are cut drastically. This suggests that a variety of measures, for example, an arms control agreement that places limitations on the arms competition – even if it does not terminate it – may be very useful.

There is another aspect to be considered. Consider the four cases in which the initially smaller navy surpasses the larger. The three that did end in war are associated with the World Wars. This suggests that arms races that are part of a larger set of interactions among multiple powers are both more likely to produce a change in the status quo, and to end in war.

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<sup>15</sup> It would be misleading to enter both sides of a two-way competition as separate cases in this table. If a two-way competition ends in war, this would result in 2 wars being shown in the table, but these two entries represent only a single war. Therefore, each two-way competition is only entered once in Table 5, resulting in 21 cases, rather than 24.

Finally, I consider the linkage between changes in the challenger's dispute involvement during the arms competition and war. That is, I classify each arms competition by whether the challenger significantly increases its dispute involvement, decreases its dispute involvement, or undergoes no change, and relate that to the war/no war outcome of the arms competition.<sup>16</sup>

**Table 6**  
**Impact of Challenger Dispute Involvement on War/No War Outcome**

War/No War	Dispute Involvement of Challenger			Total
	Decrease in Involvement	No Change in Involvement	Increase in Involvement	
No War	4 (80%)	7 (70%)	1 (17%)	12 (57%)
War	1 (20%)	3 (30%)	5 (83%)	9 (43%)
Total	5	10	6	21

The pattern is intriguing. If the challenger either decreases its dispute involvement during the arms competition, or does not undergo a significant change, then about a quarter the arms competitions end in war (4 out of 15 competitions). But in those arms competitions in which the challenger significantly *increases* its dispute involvement, war is a very likely outcome (5 of 6 competitions).

**Summary of the Analysis**

Given the small number of cases to analyze, there are limits to how far one can go in conducting analysis. It seems particularly inappropriate to conduct multivariate statistical analysis with only 24 (and in some tables, 21) cases. So at this point, let me stop and briefly summarize what I have found.

Although the challenger often closes the gap with the target state (about 50 percent of the time), it is not common for the challenger to surpass the target. Although

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<sup>16</sup> As with Table 5, there are only 21 cases here. In two-way competitions, only the dispute involvement of the challenger state is analyzed.

this matter was not addressed in this paper, I suspect there are several reasons. First, the size of the gap between the challenger and the target may be so large that it cannot be closed. Second (not necessarily distinct from the first), the target may have a significant advantage in industrial capacity, so it possesses the means to out-produce the challenger, even if the gap is not that large. Third, the target may have naval predominance as a high priority goal, and be more willing than the challenger to sacrifice to maintain its naval position.

If an arms competition occurs, it is not that likely that this will lead to an increase in the dispute involvement of the challenger. In fact, overall, the challenger is about as likely to *decrease* its dispute involvement during a competition as to increase it. However, if the arms competition will result in the challenger surpassing the target, then it is very likely that this will be associated with an increase in the dispute involvement of the challenger (80 percent of the time).

There is no “automatic” linkage between an arms competition and war. War is more likely if the challenger surpasses the target state, but it is less likely if the challenger decreases its dispute involvement. As well, arms competitions that end in war are particularly associated with the naval competitions that preceded the World Wars.

## Back to the Present: China, Power Projection, and the Future<sup>17</sup>

Let me return to the situation in Asia. I begin by comparing China with two major regional military powers, Japan and India, in 1990 and 2000. Note that these comparisons rely heavily on numeric comparisons at the expense of quality. As well, I do not directly assess the synergies between various weapons. For example, India's naval power includes airpower, which allows it to deploy forces away from its land based airpower, something that China cannot do. However, it should be noted that the Indian capability is quite small, consisting of a handful of VSTOL aircraft. These could be decisive at sea if the opponent has no aircraft, but cannot be decisive against a large ground-based air presence.

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<sup>17</sup> Given the focus on regional arms competitions in this paper, little or nothing has been said about the United States in Asia. Several comments are merited. First, the U.S. presence in the region serves to make it more difficult for *any* state in the region to establish dominance. But the legacy of the Cold War, and the historical friends and/or allies of the United States in the region (Japan, South Korea, and Taiwan) would serve in particular to make any Chinese drive to surpass the other regional powers more difficult because, in the face of conflict, the U.S. is likely to intervene to protect its traditional friends. Second, the U.S. is currently pursuing a defense system against theater ballistic missiles, including seeking partners to join in the development of these systems (particularly in Asia), and to provide locations for their deployment. Given the research and projections of this paper, what are the implications of this program (assuming that one or more Asian countries join the U.S. in the development of these systems, and agrees to their deployment)? If a system having a reasonable chance of working successfully could be deployed (by no means a given), this is likely to have a double-edged effect. First, it would raise the bar for what China would have to do in order to create a significant power projection capability by the deployment of ballistic missiles. Second, such a system is likely to spur the Chinese on. Logically, the easiest way to attempt to defeat such a system is to overwhelm it by launching a large number of missiles, and/or using multiple warheads. One can envision a race between a high technology anti-missile system, and a lower technology (but more numerous) set of attacking systems. It is not clear which side can win such a race, or whether this would just serve as the catalyst for a high velocity arms competition.

Table 7

Chinese Power Projection Capability vs. Japan and India, 1990 to 2000

Component of Power Projection Capability	China Versus Japan	China Versus India
ICBMs	Gain (Japan has no ICBMs)	Gain (India has no ICBMs)
SLBMs	No Change (Japan has no SLBMs)	No Change (India has no SLBMs)
Intercontinental Bombers	No Change (Japan has no bombers)	No Change (India has no bombers)
High Performance fighter and attack aircraft, with support	Gain; China had 0 aircraft; now has about half as many as Japan, but still almost no support (Japan has support).	Gain; China had 0 aircraft; now has about half as many as Japan, but still almost no support (India has support).
Aircraft Carrier(s)	No Change, although 1 Chinese carrier reported under construction	“Gain:” China has 1 carrier reported under construction; India went from 2 to 1 carrier <sup>18</sup>
Multipurpose ocean-going surface ships	Gain, although China went only from 0 to 2 with marginal SAM capabilities	Gain, although China went only from 0 to 2 with marginal SAM capabilities, while India went from 14 to 15
Nuclear powered attack submarines	Slight gain; China goes from 4 to 5. Japan has no nuclear subs, but went from 14 to 16 diesel subs.	Slight gain; China goes from 4 to 5. India has one nuclear sub, went from 18 to 16 diesel subs, current mix is better.
Amphibious Shipping	Gain (note: China was ahead in 1990); China went from 5800 to 8300; Japan from 990 to 1190.	Gain (note: China was ahead in 1990); China went from 5800 to 8300; India from 1460 to 1980.

Sources: International Institute for Strategic Studies, 1990, 1999; Federation of American Scientists 2000a

Clearly, China has improved its position versus both India and Japan (in fact, in an almost identical fashion). In the ability to sustain a presence far away from the homeland however, China still cannot do very much. It has only just acquired modern

<sup>18</sup> India is planning to extensively refit the former Russian aircraft carrier *Gorshkov* (For Your Eyes Only, 2000).

high-performance aircraft, and has little of the support necessary to operate at long distances (it has only recently reported that it converted a few bombers into aerial tankers, and is in the process of purchasing and outfitting its first airborne early-warning aircraft (FYEO, 1999). Absent an aircraft carrier (and the training necessary to operate aircraft from it), and with only two real multipurpose surface ships, it cannot operate its navy at great distances from land. Finally, although it has more amphibious lift than both India and Japan, it cannot stage a significant amphibious assault.<sup>19</sup>

Clearly China has just begun to develop its ability to project power. Although it has gained in many dimensions of power projection since 1990, it is only in the high-performance aircraft that China has gained significantly (and then only recently). In most cases, China has gone from little or no ability to project power, to a modest ability. China would need to increase its power projection significantly to pose a serious threat to the region. If the current situation is not worrisome, based on the analysis of this paper, what would be signs that the situation is becoming ominous? The historical record of naval competitions since 1816 suggest that a Chinese increase in power projection capability would be a cause for concern under the following circumstances:

1. *If China surpasses the other regional powers in power projection capability.* This only seems likely if the other significant military powers in the region stand still, and even then, an across the board power projection edge would take years for China to develop. Considering that the other major regional powers have additional security concerns in addition to China (Japan must worry about the Korean peninsula, India must worry about Pakistan), it seems unlikely that either India or Japan would simply stand still.
2. *If an increase in power projection capabilities is accompanied by an increase in Chinese militarized interstate disputes.* It is hard to project future Chinese dispute behavior. It is clear that China will continue to have a high degree of concern about Taiwan, and may well engage in disputes to reaffirm its opposition to anything said or done by Taiwan that suggests it

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<sup>19</sup> For example, consider a Chinese amphibious assault against Taiwan. Assume that all of China's amphibious assault ships survive the crossing (highly doubtful). That would still pit a little over 8000 Chinese troops against an active duty Taiwanese army of almost 200,000 (International Institute for Strategic Studies, 1999: 205).

will declare its independence. One study by Baker Institute researchers suggests that China is unlikely to use force on economic or resource issues, while it may if the issue involves sovereignty or territory (Feigenbaum, 1999). This would suggest that the status of Taiwan would continue to be a flashpoint, and that the Spratley Islands (if viewed as a sovereignty issue, not an economic one) could also lead to armed conflict. Another Baker Institute study (Morgan and Palmer, 1999) suggests that if China's economic growth rate exceeds that of the world, "it is very likely that China will initiate militarized conflicts with other states," (p. 19) although they do not foresee that China will initiate a major war. As well, they expect that most of China's conflict behavior will be oriented towards protecting existing Chinese interests, rather than changing the status quo (p. 26).

3. *If an increase in Chinese power projection capabilities takes place at the same time that other regional powers are engaged in significantly increasing their power projection capabilities, this creates a series of regional arms competitions.* This is the flip side of the first circumstance. Unfortunately, given the number of interconnected nascent or active regional rivalries (India-Pakistan, India-China, North Korea-South Korea, Japan-North Korea, Japan-China), this is a distinct possibility. Of course, should these interconnected rivalries begin to escalate, it would not necessarily be China that surpasses the rest of the region in power projection capabilities.

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## Appendix: Naval Arms Competitions, 1816-1986

After each major power, the list that follows comprises the major powers with which it engaged in a naval arms competition. For example, Italy engaged in an arms competition with France from 1870 to 1878, and after that ended, another naval arms competition with Austria-Hungary from 1879 to 1900. Unless otherwise specified, the goal of the state was to have a number of capital ships equal to the competitor(s).

### Austria Hungary

1902-on: Italy

### France

1816-1850: Great Britain (France wanted a 2:3 ratio)

1850-1870: Great Britain

1888-1899: Great Britain

1890-1914: Germany + Austria-Hungary + Italy

### Italy

1870-1878: France

1879-1900: Austria-Hungary

### Japan

1902-1906: Russia (70%)

1907-1940: US

### Germany

1898-1914: Great Britain

1933-1940: Great Britain

### Great Britain

1816-1854: Rival is next biggest navy.

1860-1899: Next 2 biggest navies.

1900-1914: Germany

1919-1922: United States

### United States

1898-1914: Great Britain

1919-1922: Great Britain

1922-1940: Japan

1950-on: Russia

### Russia

1885-1891: (Great Britain - France)

1892-1906: Great Britain

1907-1914: Germany

1935-1940: Germany

1950-on: United States

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