

Testing Novel Implications
from the Selectorate Theory of War

by

Bruce Bueno de Mesquita

(Hoover Institution, Stanford University and Department of Politics, New York University)

James D. Morrow

(Department of Political Science, University of Michigan)

Randolph M. Siverson

(Department of Political Science, University of California, Davis)

and

Alastair Smith

(Department of Politics, New York University)

Testing Novel Implications from the Selectorate Theory of War

Two-thousand five hundred years ago, Sun Tzu articulated his views about how best to wage war. On November 28, 1984 Caspar Weinberger, then Secretary of Defense in the United States, pronounced his doctrine for waging war. These two doctrines, separated by two and a half millennia, one prepared for a leader in a monarchy, the other for a leader in a democracy, express significantly different views about when and how to fight a war. The seemingly contradictory perspectives of Sun Tzu and Caspar Weinberger appear to be reconciled by the selectorate theory of war.¹ That theory focuses on policy choices and resource allocations that are incentive compatible for a leader who hopes to survive in office. When leaders depend on support from a small coalition of essential backers to stay in office – as is true in monarchy, junta, and autocracy – then it is incentive compatible for them to follow the advice given by Sun Tzu. When leaders depend on support from a large coalition then they are expected to follow the recommendations of Caspar Weinberger.

We summarize the relevant elements of the selectorate theory and then show how it relates both to claims by Sun Tzu and Caspar Weinberger and to the known regularities associated with the so-called democratic peace. For instance, it explains why democracies are unlikely to fight wars with each other but do fight with non-democratic states and why they typically win. The selectorate theory, as applied to war, was constructed with those regularities in mind. Therefore, a demanding test requires an examination of novel hypotheses that follow from that theory. In this study we develop measurement procedures and conduct empirical tests of five novel hypotheses derived from the selectorate theory of war.

A Brief Summary of the Theory

War is fundamentally a political act, domestically as well as internationally. Domestic

institutions for leader removal and selection create different incentives for leaders before, during, and after war. The selectorate theory of war indicates that, compared to leaders who answer to a small number of supporters, those who answer to a large winning coalition require greater confidence in their prospects of victory to go to war; they make greater efforts to secure victory should they not prevail quickly; and they do not reduce their military allocations after war as rapidly.²

A large winning coalition pushes a leader to produce public goods such as success in foreign policy, while a leader with a small winning coalition can devote resources to private benefits for supporters to compensate for failures in foreign policy. These generalizations follow from the fact that, all else equal, the resources committed to private goods are necessarily spread more thinly as the winning coalition increases in size while the value of public goods to members of the winning coalition does not decrease as the winning coalition increases in size.³ Leaders are assumed to maximize their prospects of retaining power and to leave as many resources over for their discretionary use as is compatible with keeping their coalition loyal. In this way, leaders minimize the risk that someone in their coalition will join a rival's coalition and that they will be toppled from power.

In wartime, as in peacetime, the theory indicates that leaders in large coalition polities (like many democracies) seek gains primarily in the form of public goods, while in small coalition systems (like many autocracies) leaders pursue primarily the acquisition of private benefits.⁴ Although each type of regime extracts different mixes of goods from a victorious war, all types of regimes provide incentives for leaders to prefer victory to defeat. But whether victory across these systems is sufficiently attractive to be worth making an extra effort to achieve is another matter. A democratic leader cannot provide the public goods sought in the war if she does not win, while an autocrat is likely to continue to hold power by rewarding cronies with private goods even after a military defeat.⁵

The formal model treats the realization of victory, separate from any other benefits

acquired in a war, as a public good. Of course, victory also provides political leaders with the opportunity to fulfill additional goals. Domestic institutions shape these goals.⁶ For large coalition leaders, the goals typically revolve disproportionately around extracting or imposing policy concessions on the defeated adversary. The importance of private goods for small coalition leaders typically leads them to seek wealth, territory, or tribute. Victory is a necessary pre-requisite for attaining any of these goals.⁷

Winning wars is costly. Leaders typically divert some of the resources they raise through taxation from other uses to pursue victory. Tax revenues and, therefore, the resources at a leader's disposal, are endogenous to the institutional configuration of the state. Large coalition systems have lower marginal tax rates than do small coalition systems (at comparable income levels), with each system taxing to meet the leader's survival needs.⁸ In a large coalition system, because of its emphasis on public goods production, costs and rewards are spread across the entire population. If resources are diverted to the war effort, each individual is making only a small sacrifice in terms of forgone benefits. In contrast, in a small coalition system, in which the general population already faces high – even confiscatory – taxes, benefits are concentrated in the hands of a few loyal supporters. Therefore, diverting resources to the war effort cuts heavily into the benefits of key supporters, the population having little left to give up.

Victory in war may subsequently provide access to additional private benefits from spoils, but ex ante access to these benefits is probabilistic – depending on victory – while the cost in terms of current forgone benefits is certain if resources are diverted to the war effort. Additionally, in small coalition systems much of the additional resources ends up in the hands of the leader rather than in the hands of the supporters who paid to gain them.⁹ In large coalition systems, the cost of war effort is relatively small for each individual and, if victory is attained, it is a public good enjoyed by all as well as potentially adding to the limited private goods enjoyed by coalition members.

To illustrate the central idea that large coalition leaders are willing to try harder in war,

consider the limiting case, recalling that the general case is developed elsewhere.¹⁰ Suppose a leader must choose between making an all-out effort that guarantees victory (with its possible access to spoils and/or policy gains) and making no additional effort at all, even though this makes defeat inevitable. Any extra resources behind an all-out effort are not available for distribution to the winning coalition until victory is realized. Say, in the limiting case, that the leader has R resources that could be committed to the war effort or distributed as private goods to her winning coalition, the value of victory is v (with v including all public and private goods associated with victory in war), the value of defeat 0 , and all the costs of fighting imposed by the adversary, designated k . If the leader makes an all out effort, her state wins the war, and her coalition receives a payoff of $v-k$. If instead of making an all out effort she distributes the current resources to the W members of her winning coalition as private goods, then the state is defeated in war and the payoff to members of the leader's coalition is $0-k+R/W$, assuming that each coalition member receives an equal share of the private goods.

Since survival in office depends upon maintaining the support of the winning coalition, leaders pick the policies that their supporters prefer. Leaders who depend upon large coalitions are more likely to make an extra effort, trying hard to win during a war; that is, it is more likely that $v-k > R/W-k$ for these leaders than for those who answer to a small winning coalition. After all, R/W tends toward 0 as W increases. Autocrats are expected to choose to provide private goods to their supporters even if, as in this example, that act makes military defeat more likely insofar as R/W increases in value as W shrinks in size.¹¹

Suppose we consider more explicitly the attraction of winning or losing in a situation in which spoils will accompany victory. We do so by relaxing the assumption that victory is exclusively a public good and allow victory to result in v public goods and r additional resources (i.e., the spoils of war) that can be allocated to the leader's supporters. If a leader makes an all-out effort then the public and private benefits of winning for her coalition are $v + r/W - k$. Alternatively, if the leader chooses to retain resources at the expense of losing the war, then the

payoff to her coalition is $R/W - k$. The leader prefers additional effort when $v > (R-r)/W$, the latter term of which is decreasing in W provided that $R > r$; that is, national resources (R) exceed the value of post-war spoils (r).

Autocratic leaders could improve their chances of victory by trying harder but significant extra effort is not generally compatible with their desire to stay in office. This is normally true even if the consequences of deposition are a function of regime type. As Hein Goemans points out, being ousted is often more costly for autocrats than democrats, an observation that reinforces our conclusion.¹² We assume that the primary goal of all leaders is to keep their jobs. Given this, the principle component in every leader's objective function is re-selection. It may be true, *conditional on being ousted*, that autocrats are more likely to be killed or exiled (which may or may not be especially costly, depending on the place to which they are exiled) than are democrats, but it is also true that the risk of being ousted is most effectively diminished for autocrats by spending less on the war effort and reserving more for their domestic coalition because domestic ouster is a larger threat for autocrats than is deposition by a foreign victor. As noted earlier, autocrats can help themselves survive defeat in war by accommodating the policy demands of a democratic victor, something that is harder for defeated democrats to commit to.

Bueno de Mesquita et al derive formally that the extra effort made to win a war increases with coalition size in general *provided* that the ex ante prospects of victory are not already overwhelming.¹³ When a state's ex ante chance of winning is overwhelming, it is likely to win quickly and so will not need to commit additional resources to improve those chances. If the prospects of winning the war are very good, then any leader is willing to fight. If the prospects of winning the war are not very good, then small coalition leaders may still be willing to fight according to the selectorate logic but large coalition leaders are more likely to avoid war and seek a negotiated settlement of differences with their foe.¹⁴ Our first expectation then is that leaders with small winning coalitions will accept lower prospects of victory when they go to war than will leaders with large winning coalitions. We restate this as the first hypothesis to be

tested:

H1: Larger coalition systems exert greater selectivity in the decision to wage war than do smaller coalition systems. Therefore, relative to autocracies, proportionately fewer democracies are expected to be observed waging war when their ex ante military advantage over the rival is not overwhelming.

A second, closely associated hypothesis follows from the theory. Bueno de Mesquita et al show that the conditions for initiating a dispute, or continuing to participate in one without negotiating, are more difficult to satisfy for democrats than for autocrats, although, because democrats are predicted to try harder to win than are autocrats if there is a war, the difference in incentives to initiate a dispute are not as great as the selection effect on fighting war.¹⁵ This implies,

H2: Larger coalition systems exert greater selectivity in the decision to participate in militarized interstate disputes than do smaller coalition systems when the odds of military victory are not overwhelming. However, large coalition systems are less selective in these non-war situations than they are about fighting wars. The same is not expected to be true of smaller coalition regimes.

If the ex ante chance of victory in war is excellent, then any leader expects that he or she will not have to try especially hard to win. The real decision comes when that expectation is not met, when the war is not won quickly, and a greater effort is required to prevail. It follows that democrats try especially hard when, having chosen to fight (believing their chances for victory were excellent), they come to realize that their expectation of an easy victory was mistaken. In this scenario they are expected to increase their effort over their initially chosen level in order to improve the chances of victory. In contrast, autocrats are expected to choose a level of effort at the outset of a war and then not to increase meaningfully beyond that effort level if the war progresses poorly. That is, their effort level is less responsive to the prospects of victory revealed on the battlefield than is true for democrats.¹⁶ This leads to our third and fourth hypotheses:

H3: Conditional on waging war, smaller coalition regimes do not make a greater effort than do larger coalition governments in the early phase of a war.

H4: If the war continues for a prolonged period, say more than one year, then leaders in larger coalition systems increase the resources devoted to the war effort proportionately more than do leaders in smaller coalition systems.

Note that this hypothesis does not say that the total resources committed to a war by large coalition systems will be greater than small coalition systems, but rather that the proportionate increase in the resources devoted to the war will be greater for large coalition systems than for small coalition systems.¹⁷ In fact and in the selectorate theory, it may be that large coalition systems can prevail over small coalition governments while spending less on the war because so much of the latter's spending is devoted to rents paid to those members of the military who keep the leader in power. Although one case certainly does not prove the point, what transpired in Mexico in the period before the Mexican-American War is illustrative of such a situation.

Mexican military expenditures were often more than one-half the national budget.¹⁸ Yet, the fact remained that "The men lacked uniforms, weapons, ammunition and often went for months without pay."¹⁹ But not everyone in the Mexican military suffered, since "most of the top generals, despite low official salaries and little or no inherited wealth, promptly acquired substantial rural holdings."²⁰ This was so because throughout much of this period no Mexican leader was able either to gain power or retain it without the support of the army.²¹ While the above describes the conditions in Mexico, these circumstances are reflective of what often exists in authoritarian regimes where it is the army that keeps the leaders in power.

As with the arguments about how best to fight a war, the theory also provides clues about how best to end the war and experience the peace. The selectorate theory implies a difference in the motivations behind war fighting as a function of regime type.²² Because leaders of large coalition regimes must provide public goods to survive in office, their war aims are oriented toward enhancing public well-being at home. To achieve this enhancement, they fight wars

disproportionately with the intention of imposing policies on their foes. Leaders of small coalition systems disproportionately choose to fight wars over the acquisition of territory, slave labor, or other booty.

When an autocrat overthrows another autocrat's government through war, occupying the defeated country to extract a continuous flow of loot (say, by controlling oil fields), there is little or no material change in the well-being of the citizens of the occupied country. They had a rent-seeking regime to begin with and they do again. Although the names of the leaders have changed, the institutional incentive to continue to provide few public goods and many private rewards for cronies persists whether the old autocracy is retained or is deposed and replaced by a new autocracy. Whether under the old regime or the new autocratic government, the citizens are taxed heavily, opposition oppressed severely, and income redistributed to the members of the winning coalition. Consequently, the average citizen's miserable lot is unaltered and so citizens do not have a substantial new incentive to raise the costs for ruling by the new autocratic administration compared to those faced by the old autocratic regime. Therefore, in this scenario the autocratic victor need not spend much to maintain the post-war peace settlement.²³ Since autocrats hardly ever defeat democrats and even less often depose them and then occupy their territory, autocrats are unlikely to face a need to enforce their rent-seeking society against people accustomed to live with a high level of public goods. So, when victory leads to the extraction of wealth from the vanquished, there is little need to incur additional costs by pursuing such activities as regime replacement, nation building, or the like. When wars are fought to achieve policy objectives, as is true for large coalition regimes, it is often necessary to commit additional resources to overseeing the implementation of the desired policies in the vanquished country or otherwise to incur costs in maintaining a policy-based settlement.

Bueno de Mesquita et al offer a formal proof of these claims. Here we explore the empirical implications.²⁴ In particular, we expect that postwar expenditures return to peacetime levels more quickly in smaller coalition systems than in larger coalition systems in part because

the latter must more vigorously enforce the peace than must the former.²⁵ We state this as the final hypothesis:

H5: At the end of a war, larger coalition leaders demobilize (that is, reduce military spending) more slowly than do smaller coalition leaders.

The selectorate explanation for war has been shown to account for the set of known empirical regularities generally associated with the democratic peace.²⁶ Since these regularities have already been established in the empirical literature, we do not test them here. Rather, we examine the five novel war hypotheses presented here. Such tests of novel claims offer the potential to distinguish between competing explanations of war.

Sun Tzu, Caspar Weinberger and the Selectorate Theory of War

The predictions made by Sun Tzu, Caspar Weinberger, and deduced in the selectorate theory provide the basis for several empirical tests. Sun Tzu wrote:

The skillful general does not raise a second levy, neither are his supply wagons loaded more than twice. Once war is declared, he will not waste precious time in waiting for reinforcements, nor will he turn his army back for fresh supplies, but crosses the enemy's frontier without delay. . . . Now, in order to kill the enemy, our men must be roused to anger. For them to perceive the advantage of defeating the enemy, they must also have their rewards. Thus, when you capture spoils from the enemy, they must be used as rewards, so that all your men may have a keen desire to fight, each on his own account.²⁷

Caspar Weinberger indicated:

First, the United States should not commit forces to combat

overseas unless the particular engagement or occasion is deemed vital to our national interest or that of our allies. . . .

Second, if we decide it is necessary to put combat troops into a given situation, we should do so wholeheartedly, and with the clear intention of winning. If we are unwilling to commit the forces or resources necessary to achieve our objectives, we should not commit them at all. . . .

Third, if we do decide to commit forces to combat overseas, we should have clearly defined political and military objectives. And we should know precisely how our forces can accomplish those clearly defined objectives. And we should have and send the forces needed to do just that. . . .

Fourth, the relationship between our objectives and the forces we have committed – their size, composition, and disposition – must be continually reassessed and adjusted if necessary. Conditions and objectives invariably change during the course of a conflict. When they do change, then so must our combat requirements. . . .

Fifth, before the US commits combat forces abroad, there must be some reasonable assurance we will have the support of the American people and their elected representatives in Congress. . . .

Finally, the commitment of US forces to combat should be a last resort.²⁸

Sun Tzu's perspective can coarsely be summarized as: (1) advantage in capabilities is not as important as quick action in war; (2) resources should be sufficient for a short campaign that does not require reinforcement or significant additional provisions from home; and (3) distributing private goods is essential to motivate soldiers to fight. Sun Tzu says that if the army initially raised proves insufficient or if new supplies are required more than once, then the

command lacks sufficient skill to carry the day, implying that the fight is best given up rather than risk exhausting the state's treasure and giving additional advantages to rival chieftains. Indeed, his advice is rather specific. "If equally matched, we can offer battle; if slightly inferior in numbers, we can avoid the enemy; if quite unequal in every way, we can flee from him."²⁹

Weinberger's doctrine does not emphasize swift victory, but rather a willingness to spend however much victory requires, a point made even more emphatically in the Powell Doctrine. Weinberger and Colin Powell both contend that if the United States is not prepared to commit resources sufficient to win, then the United States should not get involved at all. Here they both argue for great selectivity in choosing when to risk war. At the same time Weinberger (and Powell) recognizes that once committed, victory may take a long time and that, therefore, there must be regular reassessment of objectives in light of evolving circumstances. He endorses raising a larger army and spending more treasure if warranted by subsequent developments.

Sun Tzu emphasizes the benefits of spoils to motivate combatants ("when you capture spoils from the enemy, they must be used as rewards, so that all your men may have a keen desire to fight, each on his own account"). Weinberger emphasizes the public good of protecting vital national interests. He notes, "the United States should not commit forces to combat overseas unless the particular engagement or occasion is deemed vital to our national interest or that of our allies." Sun Tzu's attentiveness to private rewards and Weinberger's concentration on the public good of protecting the national interest represent part of the great divide between small coalition and large coalition regimes posited by the selectorate theory. Sun Tzu exerted a lasting influence on the study of war – and on his own King Ho Lu of Wu – because his recommendations are the right recommendations for leaders, like monarchs and autocrats, who rule based on a small coalition. The Weinberger Doctrine – like its more recent replacement, the Powell Doctrine – exerts influence over American security policy because it recommends the most appropriate actions for leaders who are beholden to a large coalition.

Data and Design

To test the hypotheses, we construct a data set in which the unit of analysis is a country-year. For each nation-year we collect data on military expenditures taken from the Correlates of War Project (COW). These data are included for about 140 countries and for the period 1816-1993.

In assessing how hard nations try in war, we focus on differences in military spending during wartime compared to peacetime across regime types, controlling for prior military spending. It hardly needs saying that such expenditures are the immediate way societies pay for war. Any shift of resources into war effort above and beyond “normal” pre-war military spending reflects a decision to try harder, depriving the citizenry either of government services sacrificed to pay for the extra war effort or of personal income not taxed by the government before the war. This is true even if the extra spending goes into the pockets of military and civilian leaders who use the opportunity to steal more from the people through defense contract kickbacks and the like. Unfortunately, this use of military spending is common, especially in autocracies. To the extent that such corruption arises, it undermines the empirical observation of the main effects predicted here.

Dependent Variable

The dependent variable is the logarithm of each country’s annual military expenditures (Log(Military Expenditures)) adjusted to constant US dollars.³⁰ The correction for constant dollars adjusts for any general inflation-driven trend in military expenditures. We use the logged value because we are interested in the magnitude of changed effort. The regression models we specify include the Lagged Log(Military Expenditures), adjusted to constant US dollars, as a control variable. With the inclusion of this variable the model effectively looks at the proportionate change in military expenditure; that is, the difference in the logged values is the proportional increase or decrease in military spending.

Winning Coalition Size: Concept and Estimation

The winning coalition conceptually has two distinct qualities. First, its support is essential for the incumbent to stay in office. If members of the winning coalition defect to a rival and new members cannot quickly be added to replace them, then the incumbent is deposed and the rival comes to power. Second, members of the winning coalition are accorded privileges unavailable to nonmembers. Specifically, members share in any of the private benefits that the leadership distributes. These benefits include opportunities for corruption, black marketeering, and so on.

In most democracies, the winning coalition consists of the set of voters whose support is essential to selecting and keeping a leader in office. In a plurality-voting system like the United Kingdom, the winning coalition can be as small as one quarter of the voters, still a large size.³¹ Members of the coalition receive few and modest private benefits. Conservative prime ministers, for instance, tend to promote tax legislation that favors their core (relatively wealthy) voters while Labour prime ministers promote welfare legislation that is more likely to help their supporters. In an autocracy like Kim Chong-il's North Korea, by contrast, the winning coalition is tiny. Kim Chong-il is kept in power by key military leaders, close, loyal relatives, and essential bureaucrats numbering somewhere between 250 and 2500 out of 20 million citizens, or no more than about one ten thousandth of the population. It is estimated that Kim Chong-il requires \$1.2 billion to sustain himself in office out of the approximately \$20 billion that makes up his nation's GDP. This means that if the winning coalition is near its upper bound in size, the average member receives about \$500,000 in a country with a per capita income around \$600.³²

We roughly approximate the order of magnitude of the size of each polity's institutionally required coalition as a composite index based on the variables *REGTYPE*, taken from Arthur Banks's data, and *XRCOMP*, *XROPEN*, and *PARCOMP* from the POLITY IV data. When *REGTYPE* (regime type) is not missing data and is not equal to codes 2 or 3 so that the regime type was not a military or military/civilian regime, we award one point to the coalition

size index. Military regimes are assumed to have particularly small coalitions and so are not credited with an increment in coalition size. When *XRCOMP*, that is, the competitiveness of executive recruitment, is larger than or equal to code 2 then another point is assigned to the index. An *XRCOMP* code of 1 means that the chief executive was selected by heredity or in rigged, unopposed elections, suggesting dependence on few people. Code values of 2 and 3 refer to greater degrees of responsiveness to supporters, indicating a larger winning coalition.

XROPEN, the openness of executive recruitment, contributes an additional point to the index if the executive is recruited in a more open setting than heredity (that is, the variable's value is greater than 2). Executives who are recruited in an open political process are more likely to depend on a larger coalition than are those recruited through heredity or through the military. Finally, one more point can be contributed to the index if *PARCOMP*, competitiveness of participation, is coded as a 5, meaning that the state has stable, enduring organized political groups that regularly compete in national politics. This variable indicates a larger coalition on the supposition that stable and enduring political groups would not persist unless they believed they had an opportunity to influence incumbent leader by becoming part of a winning coalition.

No one variable in the index alone indicates a large coalition size, but polities that meet more of the criteria seem to be more likely to have a larger coalition than polities that meet fewer criteria because the criteria speak directly to dependence on more or fewer people in gaining and holding office. We divide the score generated by the above procedure by the maximum value of the index, which is 4. The normalized minimum value is 0 and the maximum is 1. We believe the progression from 0 to 0.25 to 0.50 to 0.75 and up to 1.0 reflects order of magnitude changes in coalition size.

Other Independent Variables

We construct four variables that estimate different phases of war. War is defined in accordance with the Militarized Interstate Disputes data (hereafter MIDs) on conflict. The first

indicator, called “First Year of War,” is coded as 1 if a state finds itself at war and it is the first year of the war. This variable is coded as 0 under all other contingencies. The second, called “Ongoing War Year” is coded 1 if a state is at war and the war is in at least its second year. The third variable, “First Year after War,” is coded as 1 in the first year for which a country that had been at war in the previous year now finds itself no longer at war. To be sure that we are not simply measuring different speeds of demobilization between small coalition and large coalition systems, we also add a variable called “Second Year after War” and code it as 1 if the observation occurs two years after the end of a country’s war participation and 0 otherwise. In additional analyses summarized later, but reported only on our web page to conserve space, we also control for whether the pace of demobilization is determined by whether the state was the victor or vanquished in the war based on the MID’s categorization of war outcomes.³³

To assess the impact of larger coalition size on war effort at each of the phases of war we interact the coalition size indicator with each of the war dummy variables. Then First Year of War by itself assesses the effort of smaller coalition states once they find themselves at war while First Year of War + First Year of War * Coalition Size evaluates the effort made by large coalition systems in the first year of fighting. The remaining measures of the phase of war and their interaction terms are interpreted analogously.

To alleviate the possibility that our empirical results might be the consequence of spurious temporal or spatial effects we include the interaction of geographic region and year as a set of fixed effects dummy variables.³⁴ We specify six geographic regions based on the Correlates of War region coding. These are: Europe; South and Central America; North America and the Caribbean; Asia; the Middle East; and Africa. We do not discuss the fixed effects in the text as they are strictly statistical corrections of no substantive interest regarding the tests of our theory. Their presence, however, makes our analyses especially demanding as we have removed any temporal and spatial factors that might be the actual explanation for shifts in the values of our dependent variable. The number of fixed effects variables can be large, so the analysis is

quite demanding.³⁵

Our first two hypotheses require different variables from hypotheses 3-5. Here we need to evaluate disputes in terms of ex ante beliefs about the prospects of victory. We do so in several different ways. We create variables called Tough_60, Tough_70, Tough_80, and Tough_90. Each of these is a dummy variable that assesses whether a country and those who fought along side it at the outset of a dispute had total COW capabilities that were less than 60 percent, 70 percent, 80 percent, or 90 percent respectively of the capabilities controlled by the two sides to the dispute, thereby making the war tough to win. We report only the results for Tough_70 as there is not a meaningful difference in the results using the other thresholds.

Each test is designed to see how well the logic of the selectorate theory fits the data when it comes to evaluating previously unexamined hypotheses about the war fighting and war selection behavior of different regime types. While we recognize that other variables exert an independent impact on the dependent variables, our objective is not to explain as much variance as possible, but to test the selectorate theory's predictions. Because effort and selection might depend on economic development or the sheer size of a society we control for the effects of these factors.³⁶ Economic development is measured as the logarithm of each country's iron and steel production per capita. This variable is highly correlated with the logarithm of per capita income, a better measure of economic development. Per capita income data, however, are only available from 1960 onward whereas iron and steel production data are available for the entire time period we study.³⁷ Societal size is measured as the logarithm of total population, thereby assessing the order of magnitude of the state's population pool.

Testing the Predictions

With the theory and coding procedures in mind, we turn now to the empirical results. These plus the results from many additional tests and the data and programs used to generate the variables are available at <http://www.nyu.edu/gsas/dept/politics/data.shtml>.

Regime Selectivity in Disputes and in War

To test the first two hypotheses, we report two simple tests and two more extensive logit analyses. The first hypothesis predicts democracies are more selective than autocracies in waging war and, therefore, are less likely to wage war unless their military advantage is substantial. The second hypothesis suggests that the selectivity of large coalition regimes, though still present, is attenuated when it comes to disputes that do not escalate to the level of warfare. Table 1 summarizes the comparison of coalition size to willingness to participate in a war depending on whether or not, by the Tough_70 criterion, the state has overwhelming odds of victory. Cases coded as War include all instances in which the MIDs variable called Hostlev is coded as 5, indicating that the state in question met the MIDs criteria for waging war.³⁸

Table 1 About Here

The evidence in Table 1 shows that as coalition size increases there is a dramatic decline in the willingness of governments to participate in war when the road to victory is expected to be tough. In fact, χ^2 for the table is 57.8 which, with four degrees of freedom, would occur by chance fewer than one time in a thousand. Indeed, even the ten cases of democracies that were willing to fight with relatively poor odds are instructive. These cases are Canada, the United Kingdom, France, Australia, and New Zealand in 1939; Greece in 1896, 1897, 1912, and 1913; and Israel in 1948. Israel in 1948 did not yet have an elected government and so had not yet established its democratic credentials. David Ben Gurion and the first Knesset were not elected to office until 1949. The World War II cases highlight a feature of the selectorate theory. Although Britain and France (along with Britain's Commonwealth allies) found themselves in a "tough" war with Germany beginning in 1939, they first made extensive – unsuccessful – efforts to find a negotiated accommodation for Hitler's ambitions. The onset of war had been postponed by Britain's and France's acquiescence to Germany's over-running of Czechoslovakia and Austria. Thus even most of the few apparently exceptional cases are consistent with the theory when examined in a bit more depth.

The selection hypotheses makes three distinct claims: (1) large coalition systems facing a tough fight are more selective than small coalition regimes in the same circumstance when it comes to involvement in disputes that do not rise to the level of war; (2) large coalition systems are more selective about fighting in a war than they are about becoming engaged in disputes when the war or dispute is expected to be tough to win; and (3) small coalition states facing a tough situation are no more or less selective about war-fighting than they are about becoming embroiled in lesser disputes. Table 2 compares dispute involvement by coalition size conditional on whether the dispute is anticipated to be tough or not.

Table 2 About Here

The selection claims as tested in Table 2 and in comparing Tables 1 and 2 are supported by the evidence. With regard to the first claim, the χ^2 is greater than 67 (with 4 degrees of freedom) and would occur by chance fewer times than once in a thousand samples. The second and third claim are tested by comparing the distribution of non-war dispute participation and war participation for states with smaller coalitions (Coalition Size < 0.75) and states with larger coalitions (Coalition Size ≥ 0.75). About 63 percent of the disputes short of war in which smaller coalition systems become involved are anticipated to be tough contests. For disputes that escalate to war, the comparable figure is about 59 percent. These are not statistically different from each other. Looking at larger coalition systems, the percentage of disputes short of war that are tough ex ante is about 52. In the case of wars, the comparable figure is about 32 percent, a highly significant difference. If we make equivalent comparisons, but restricting ourselves to the smallest and the largest coalitions systems, the results are even more striking.

Table 3 revisits the selection hypotheses by assessing how regime type influences the willingness of states to escalate disputes to become wars while controlling for alternative factors. Table 3 shows the results of two logit analyses for which the dependent variable is war involvement given a dispute. In the first logit, we control for the proportion of capabilities supporting the country in question. In the second, we revert to Tough_70 as the capabilities

threshold, recalling that Tough_70 is 1 if the state in question controlled fewer than 70 percent of the capabilities between the adversaries. The first logit, then, assesses whether there is a continuous selection going on as the dispute becomes increasingly tough. In addition, in both logit analyses, we control for economic development as indexed by the logarithm of per capita iron and steel production and we control for population size.³⁹

Table 3 About Here

As the insignificant coefficient on the “Proportion of Capabilities” variable indicates, the willingness to go to war is not dependent upon the prospects of victory for autocratic systems. However, for democratic systems the likelihood of going to war sharply increases as military strength increases as evidenced by the significant positive impact of Proportion of Capabilities + Proportion of Capabilities * Coalition Size. These results are strongly significant even in the face of controls for economic development and population size. Equivalent results hold when Tough_70 is substituted for “Proportion of Capabilities.” Indeed, the significant positive coefficient for Tough_70 indicates that autocrats are particularly likely to wage war with relatively poor odds of victory. For large coalition systems, as predicted, exactly the opposite effect is observed. When the fight is anticipated to be tough (Tough_70 = 1), large coalition polities are especially unlikely to be involved in a war. The effect of Tough_70 + (Tough_70 * Coalition Size) is highly significant ($\chi^2 = 18.89, p < .001$).

While democracies are less likely than autocracies to become involved in crises in which they do not have exceptionally good prospects of victory, the degree of selectivity is magnified when it comes to making a decision to wage war. Democracies engage in disputes, but when the prospects of military success are not overwhelming they try to avoid war and seek a negotiated settlement. Autocracies do not behave in the same way. They are more willing to become embroiled in disputes when the odds of victory are not great and once engaged they show no reluctance to go on and wage war under these circumstances. They are no more selective about fighting wars than they are about picking disputes.

Regimes and War Effort

The remaining hypotheses draw distinctions between the effort made by large and small coalition regimes to win the wars in which they are engaged. Sun Tzu reminds us that leaders should not provision their wagons more than twice. He was, of course, addressing a monarch. Caspar Weinberger offers different advice, asserting that democracies should continually reassess what resources are needed to win. We hypothesize that in the first phase of war (indexed by First Year of War and First Year of War * Coalition Size), democracies try at least as hard as autocracies. In the second phase of war, when fighting is prolonged (indexed by Ongoing War and Ongoing War * Coalition Size), larger coalition systems increase their effort to achieve victory by pouring more resources into the war while smaller coalition combatants do not. Finally, at the end of the war (indexed by First Year after War, First Year after War * Coalition Size, Second Year after War and Second Year after War * Coalition Size), democracies make a significant effort to enforce the peace while smaller coalition leaders demobilize more quickly, cut costs, and return to their pre-war allocation of resources.

Table 4 summarizes the results of two regression analyses of hypotheses 3-5, the war effort hypotheses. The first column of results is based on an analysis that assesses demobilization during the first year after the war. The second column shows the comparable findings while including the effects of demobilization two years after the war ends. The tests control for economic development, population size, region-year fixed effects, the previous year's military spending and for the institutional structure (that is, coalition size) lagged by one year. The control for the lagged logarithm of military expenditures makes our tests especially demanding. Since virtually all the variance in a given year's military spending level is likely to be explained by the previous year's spending, controlling for lagged expenditures focuses attention on whether war participation and political institutions together account for the *marginal change* in spending. Baseline military spending is established by the lagged dependent variable, adjusted to

reflect any difference due to economic development, size of the polity in terms of population, and prior institutional configuration. By controlling for the previous year's institutional structure (Lag(Coalition Size)) we correct for any disparity in peacetime military spending that is due to political institutions. We are agnostic with regard to the effects of the control variables. The remaining variables test the selectorate hypotheses about deviations from baseline effort that can be attributed to the joint effects of war and political institutions.

We performed a number of checks for robustness in addition to the results reported in Table 4. For instance, we replicated the tests in Table 4 while also adding a control for the percentage of the capabilities possessed by the state in question to see whether power, rather than regime type, explains differences in effort level. We also replicate our tests substituting the POLITY indicator for Democracy minus its indicator for Autocracy as an alternative for coalition size. The inclusion of the power control variable does not alter any results and is itself statistically insignificant. Likewise, substituting Democracy-Autocracy for coalition size produces substantively and statistically similar results. It is political institutions, not power, that shapes decisions regarding effort level in war. Because none of these additional tests alter any of our conclusions, we do not report the details here.

Table 4 About Here

The results reported in Table 4 support the war effort hypotheses. In the first year of a war all belligerents, not surprisingly, spend more on the military than they were spending before the war (First Year of War is positive and significant and the sum of First Year of War + First Year of War * Coalition Size is positive and significant).

Once a war has been underway for a while, the experiences of the battlefield give leaders an opportunity to update their beliefs about the prospects of victory. For democratic systems in particular the prolongation of fighting must indicate that victory will not come as easily as had been expected at the outset. Therefore, the selectorate theory leads to the prediction that at this stage in the war large coalition systems will put proportionately more resources into their war

effort than will small coalition regimes. This predicted difference in effort is supported by the evidence. The variable “Ongoing War Year” is not significant, indicating that small coalition regimes do not put increased effort into the war past the initial phase measured by First Year of War. The sum of (Ongoing War Year + Ongoing War Year * Coalition Size) indicates the effort level made by large coalition systems during the stage of prolonged fighting for those wars that do not end in the first year. This sum is highly significant due to the marginal impact of Ongoing War Year * Coalition Size, the indicator of the incremental effort by larger coalition systems. Large coalition combatants dramatically increase their effort level after the first year of fighting; small coalition leaders generally maintain the same level, statistically speaking, as they brought to bear in the first year.

When the war finally ends, more autocratic regimes are expected to reduce rapidly their military spending. More democratic governments, in contrast – and remember they win almost all wars they fight – are expected to cut back more slowly. Thus, the selectorate theory leads us to expect that “First Year after War” will have a significant negative coefficient while predicting a positive coefficient for “First Year after War * Coalition Size,” indicating a significantly slower demobilization for democracies compared to non-democracies. In fact this is the case. First Year after War is negative and highly significant and the absolute value of the coefficient for First Year after War is statistically indistinguishable from First Year after War * Coalition Size ($F(1, 8196) = 0.36$). Taking into account the second year after the end of the war does not alter the conclusions regarding the rapidity of demobilization by small coalition regimes and the substantially slower demobilization of large coalition regimes.

We now pause to consider alternative specifications that might more deeply probe the selectorate predictions. While doing so we explain why – in keeping with expectations from the selectorate theory – these seemingly preferable specifications are barely testable.

Some wars are bilateral and others multilateral. Bilateral wars in principle provide a superior basis for testing the differences in war effort across regime types. After all, in bilateral

wars each involved party indisputably made a strategic decision about fighting rather than reaching an agreement. The problem is that when disputes and wars are bilateral, ex ante estimates of how tough the fight will be are likely to prove more accurate than are those estimates when the war is multilateral. Consequently, few bilateral wars involving a large coalition regime are expected to be prolonged, calling for an updated estimate of the effort needed to win. In fact, the data include only one bilateral war that lasted for more than one year—the Mexican-American War – and involved a large coalition polity. We have replicated the tests based only on bilateral wars and find support for all of the effort hypotheses. Still, we are reluctant to make claims for the theory based on only one prolonged, large coalition bilateral war involving just three observations (1846-1848).

The selectorate theory's selection argument also implies that we should rarely observe democracies losing the wars in which they become embroiled because when democracies at war realize they face a tough fight, they increase their effort and, therefore, their chances of winning. Because democracies rarely lose the wars in which they fight, it is not statistically possible to separate reliably the effects of winning from the effects of regime type. Nevertheless, we replicated the tests with controls for victory or defeat and found that in the few cases where we have variation on war outcomes for large coalition regimes, victory and coalition size both independently contribute to slow demobilization. For small coalition regimes, victory also leads to slower demobilization than does defeat, but still small coalition size hastens demobilization compared to large coalition systems whether the regime wins or loses. We do not report these tests here because, although consistent with the theory's predictions, the democratic side of the ledger is based on a very small set of defeats in war, a factor that itself is predicted by the selectorate account.

The impact of coalition size on military expenditures based on our core findings from Table 4 is displayed graphically in Figure 1. Using the estimates in model 2, we predict military expenditures during and after a one year war and during and after a two year war for both small

and large coalition systems (coalition size = 0 or 1). For visual clarity, in Figure 1 we compare the predicted expenditures during and after war relative to predicted expenditures if no war occurs, normalizing so that the initial baseline spending level is 100. If no war occurs then military spending remains at 100. Figure 1 shows that in the first year of a war all regimes increase their military expenditures. This increase is statistically similar for both large and small coalition systems. However, this is where the similarity in wartime military expenditures ends.

If the war continues for a second year then Figure 1 shows that a small coalition system makes no additional effort. In contrast, having failed to achieve victory in the first year, a large coalition government approximately doubles its military expenditures from its pre-war level. As Caspar Weinberger suggested, democracies reassess. When military expenditures are insufficient to win, as witnessed by the failure to achieve victory in the first year, democratic leaders shift additional resources towards the public goal of victory. As the selectorate theory predicts, this behavior is compatible with surviving in office in a large coalition system. Small coalition leaders do not make this extra effort because for them it is incompatible with the goal of political survival.

The predictions of the selectorate theory, as we saw statistically and now see visually, are also borne out by post-war expenditures. Independent of the length of the war, in the year after the war, military expenditures in small coalition systems drop sharply. The pattern of post-war expenditures in large coalition systems differs. Although military spending drops in large coalition systems following the conclusion of hostilities, these expenditures fall more slowly.

Figure 1 About Here.

Conclusion

We tested five novel hypotheses derived from the selectorate theory of war. The hypotheses point to subtle differences in selection effects that should operate during crises that fall short of war and during wars. Leaders of large coalition, democratic states were shown to be

more selective than their small coalition counterparts in their willingness to fight wars when the odds of victory are not overwhelming. They are also more selective than their small coalition counterparts in their willingness to take part in disputes that fall short of war when the odds are not exceptionally favorable. Still, as predicted, they are less selective about this form of participation than they are about war. Small coalition leaders show no such selectivity in their preparedness to engage in disputes short of war or in war as a function of their odds of victory. These results hold whether the odds of victory are assessed continuously, or based on a specific threshold.

Once a war has begun, we saw that the effort made to achieve victory changes as the war progresses. Large coalition leaders according to the theory almost always believe at the outset that their odds of victory are very high, while small coalition leaders tend to have less of a military advantage. Yet, both types demonstrate a significant increment in their military expenditures when at war even though the democratic leaders, given their exceptional odds, might be thought not to need to try as hard as their autocratic counterparts. If the war fails to resolve quickly, democrats try even harder while autocrats do not. And when the war is over, democrats demobilize much more slowly than autocrats. These results seem to add credence to the selectorate account and suggest avenues for additional research, including endogenous institution selection; uses of foreign policy instruments short of war, such as foreign aid or trade sanctions, to shape policy outcomes; and leader-specific punishment strategies for resolving disputes or inducing policy compliance.

Figure 1: Military Expenditure, Winning Coalition Size (W) and the Duration of War

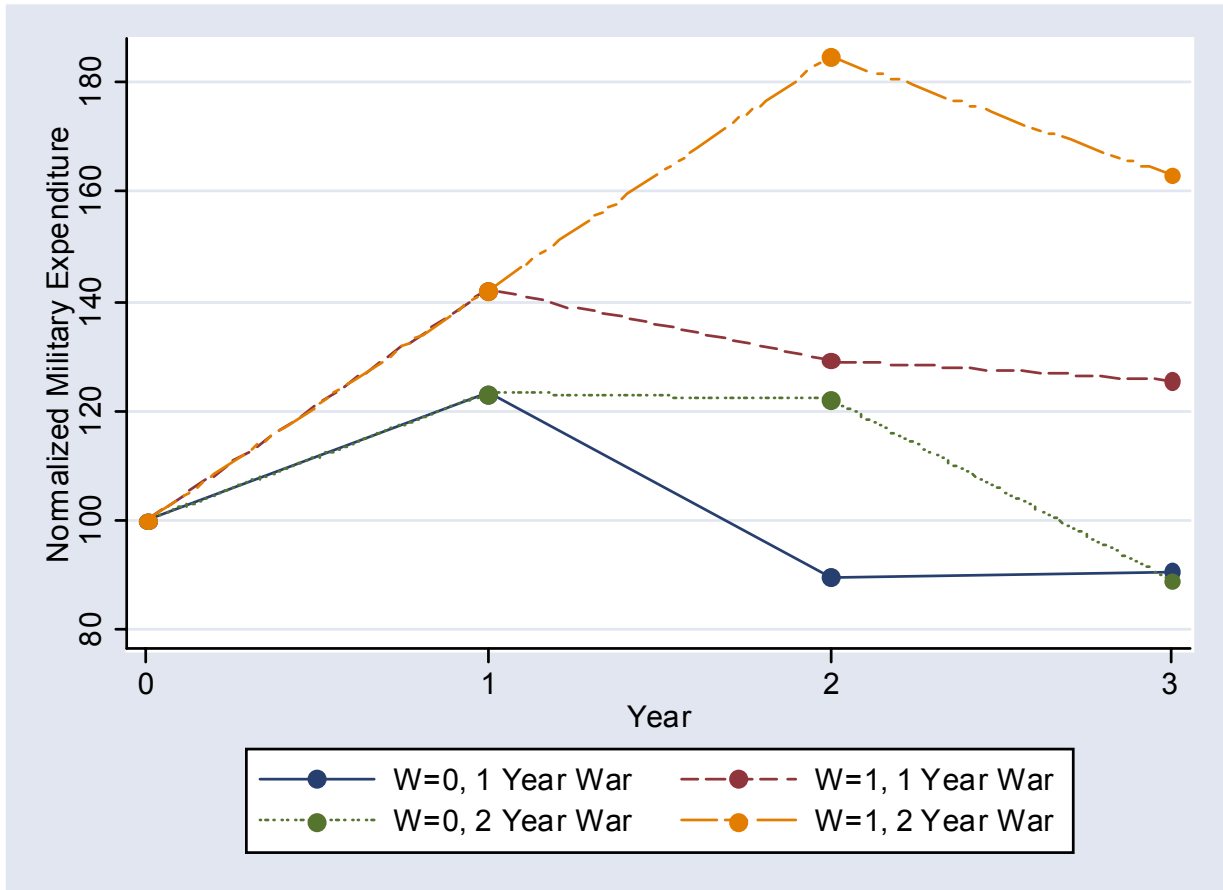


Table 1: Winning Coalition Size, Tough Contest and War Participation

Winning Coalition Size

Tough_70	0	0.25	0.50	0.75	1.00	Total
0	44 (33.3%)	78 (42.4%)	74 (44.3%)	79 (59.0%)	57 (85.1%)	332 (48.5%)
1	88 (66.7%)	106 (57.6%)	93 (55.7%)	55 (41.0%)	10 (14.9%)	352 (51.5%)
Total	132	184	167	134	67	684

Table 2: Winning Coalition Size and the Participation
in Disputes that Fall Short of War

Winning Coalition Size

Tough_70	0	0.25	0.50	0.75	1.00	Total
0	241 (34.0%)	603 (39.8%)	516 (36.7%)	652 (46.8%)	451 (48.7%)	2463 (41.4%)
1	467 (66.0%)	914 (60.3%)	892 (63.4%)	742 (53.2%)	476 (51.4%)	3491 (58.6%)
Total	708	1517	1408	1394	927	5954

* Values in parentheses are the percentage of the column that meets the row condition.

Table 3: Logit Analysis of War-Escalation Decision

	Model 1: War Involvement	Model 2: War Involvement
Coalition Size	3.117 (0.818)**	4.71 (0.912)**
Proportion of Capabilities	-0.1 (0.213)	
Proportion of Capabilities * Coalition Size	1.486 (0.417)**	
Log (Iron and Steel per Capita)	-2.363 (1.116)*	-1.674 (1.094)
Log (Iron and Steel per Capita) * Coalition Size	2.864 (1.332)*	2.19 (1.307)*
Log(Population)	0.18 (0.051)**	0.209 (0.049)**
Log(Population) * Coalition Size	-0.496 (0.092)**	-0.489 (0.089)**
Tough_70		0.5 (0.154)**
Tough_70 * Coalition Size		-1.254 (0.278)**
Constant	-3.315 (0.471)**	-4.008 (0.514)**
Observations	6640	6640

* p # .05; ** p # .01(1-tailed tests). Standard Errors in Parentheses.

Table 4: Political Institutions and Effort Levels During War With Controls For Development and Population Size.

	Model 3: Log(Military Expenditures)		Model 4: Log(Military Expenditures)
	Coefficient (Std error)	Joint Hypothesis Tests	
Lagged Log(Military Expenditures)	0.888 (0.004)**		0.888 (0.004)**
Lagged Coalition Size	-0.118 (0.061)*		-0.117 (0.061)*
First Year of War	0.209 (0.092)*	Both Coefficient=0: F(2,8196) = 16.26, p=0.000	0.208 (0.092)*
First Year of War * Coalition Size	0.142 (0.151)	Sum of Coefficient=0: F(1,8196) = 15.56, p=0.000	0.14 (0.151)
Ongoing War Year	0.015 (0.077)	Both Coefficient=0: F(2,8196) = 9.25, p=0.000	0.011 (0.077)
Ongoing War Year * Coalition Size	0.286 (0.125)*	Sum of Coefficient=0: F(1,8196) = 15.87, p=0.000	0.285 (0.125)*
First Year after War	-0.294 (0.095)**	Both Coefficient=0: F(2,8196) = 6.63, p=0.001	-0.296 (0.095)**
First Year after War * Coalition Size	0.238 (0.157)	Sum of Coefficient=0: F(1,8196)=0.36, p=0.550	0.235 (0.157)
Second Year after War			-0.033 (0.109)
Second Year after War * Coalition Size			-0.086 (0.170)
Ln(population)	0.105 (0.008)**		0.106 (0.008)**
Ln(population)* Coalition Size	0.011 (0.007)		0.012 (0.007)
Ln(per capita iron/steel)	0.032		0.031

production)	(0.009)**		(0.009)**
Ln(per capita iron/steel	0.003		0.003
production) * Coalition Size	(0.011)		(0.011)
Constant	0.415		0.409
	(0.057)**		(0.058)**
Summary Statistics	906 observations with 853 region year fixed effects		906 observations with 853 region year fixed effects

* significant at 5%; ** significant at 1% (One tailed tests). Joint hypotheses are reported for Model 3. Both Coefficient = 0 tests whether coefficients are simultaneously zero. Sum of Coefficient=0 tests if their sum is zero. Joint hypotheses for Model 4 produce the same substantive results and are not reported.

Endnotes

1. Bruce Bueno de Mesquita, James D. Morrow, Randolph M. Siverson, and Alastair Smith, “An Institutional Explanation of the Democratic Peace,” *American Political Science Review* 93 (December 1999); Bruce Bueno de Mesquita, Alastair Smith, Randolph M. Siverson, and James D. Morrow, *The Logic of Political Survival* (Cambridge: MIT Press, 2003).
2. Bueno de Mesquita et al 2003 (fn. 1), 269-272 shows why large coalition regimes require a higher probability of victory to wage war than do small coalition regimes. Ibid., 268-269 offers formal proof that large coalition leaders make a greater effort to win wars than do small coalition leaders while Ibid., 456-460 extends the theory formally to post-war behavior.
3. Ibid., 106-126.
4. We use the phrase large coalition and the term democracy interchangeably to improve readability. Likewise, we use the phrase small coalition and the term autocracy interchangeably for the same reason. If the use of democracy or autocracy is confusing, substitute “large coalition” and “small coalition” system throughout.
5. Democrats often fight to ensure that the vanquished state’s policies are in keeping with their own (that is, the victor’s) constituents’ policy goals. Because autocrats survive by providing private benefits to their backers, defeated autocrats can relatively easily commit to follow the policies sought by the democratic victor provided the victor permits the vanquished leader to have sufficient resources to sustain his or her political base. Vanquished democrats cannot as easily commit to follow the rival’s policy agenda. A vanquished democrat still needs support from a broad coalition and so cannot easily impose policies desired by the victor without a high risk of domestic deposition. Therefore, all else equal, democrats are more likely to depose defeated democratic leaders than they are to depose defeated autocrats. Because of selection effects – democrats generally back down in the face of a threat from another, stronger democrat – all else is not equal. Such regime-threatening contests between democrats are normally “off the

equilibrium path.” See Bueno de Mesquita et al 2003 (fn. 1), chapters 6 and 9.

6. Domestic institutions also shape the prospect that a leader will survive in office, creating an endogenous basis for predicting institution change. See *ibid.*, chapters 8 and 9 for an exploration of the implications of the selectorate theory for endogenous institution change based on whether the leader, the winning coalition, the selectorate, the disenfranchised (e.g., through revolution), or a foreign adversary get to choose institutions. Here we treat institutions as exogenously given and fixed during the period of the war. A thorough treatment of wartime endogenous institution change is too complex to address here given space constraints but is a topic we intend to pursue.

7. *Ibid.*, 456-460.

8. *Ibid.*, chapter 3.

9. For an analysis of kleptocracy under different institutional settings see *ibid.*, 161-168.

10. *Ibid.* ch. 6; Bueno de Mesquita et al 1999 (fn. 1).

11. Briefly consider two alternative limiting cases. Suppose k is borne only if an effort is made to win so that for those who accept inevitable defeat, the external cost of war is normalized to 0. Then extra effort is made if $v > R/W + k$. Although the threshold for making an effort to win is increased relative to the case in the text, still the likelihood of satisfying the inequality is increasing in W . Now suppose that a state choosing to make extra effort bears fewer external costs, normalized here to 0, than does a state that makes no extra effort. This might arise because the adversary sees the futility of its position and so ceases hostilities quickly before incurring heavy costs itself. Then the choice is $v > R/W - k$. In this case, the threshold for making extra effort is reduced, but still the larger W is, the more likely that the inequality is satisfied and extra effort is made.

12. Hein Goemans, “Fighting for Survival: The Fate of Leaders and the Duration of War,” *Journal of Conflict Resolution* 44 (October 2000).

13. Bueno de Mesquita et al 1999 (fn. 1), 798-99 and 805.

14. *Ibid.*, 799-802; Bruce Bueno de Mesquita and Randolph M. Siverson, “War and the Survival

of Political Leaders: A Comparative Study of Regime Types and Political Accountability,” *American Political Science Review* 89 (December 1995); James Ray “On the Level(s): Does Democracy Correlate with Peace,” in John A. Vasquez, ed., *What Do We Know About War?* (Lanham MD: Rowman and Littlefield, 2000).

15. Bueno de Mesquita et al 1999 (fn. 1), 800 and 806.

16. *Ibid.*, 805. An exception arises if it becomes evident to an autocratic leader that his or her political survival prospects have materially decreased compared to what they were believed to be at the war’s outset. As defeated autocrats are deposed less often than defeated democrats, this exception arises relatively infrequently.

17. See Dan Reiter and Allan C. Stam, *Democracies at War* (Princeton: Princeton University Press, 2002).

18. Barbara A. Tenenbaum, *The Politics of Penury: Debt and Taxes in Mexico, 1821-1856* (Albuquerque: University of Mexico Press, 1986).

19. Michael P. Costeloe, *The Central Republic in Mexico, 1835-1846* (New York: Cambridge University Press, 1993), 7.

20. *Ibid.*, 7-8.

21. Tenenbaum (fn. 17), 120.

22. Bruce Bueno de Mesquita et al (fn 1), chapter 9.

23. On the endogenous use, costs, and benefits of oppression, see Bueno de Mesquita et al 2003 (fn. 1), ch. 9.

24. *Ibid.*, chapter 9.

25. The postwar military effort hypothesis suggested here provides a generalized version of an empirical observation made by Bruce Russett in the context of his investigation of the American experience. Bruce M. Russett, “Who Pays for Defense?” *American Political Science Review* 63 (June 1969).

26. Zeev Maoz and Nazrin Abdolali, “Regime Types and International Conflict, 1816-1976,”

Journal of Conflict Resolution 33 (June 1989); T. Clifton Morgan and Sally Howard Campbell, "Domestic Structure, Decisional Constraints, and War: So Why Kant Democracies Fight?" *Journal of Conflict Resolution* 35 (June 1991); Bruce Bueno de Mesquita and David Lalman, *War and Reason* (New Haven: Yale University Press, 1992); Zeev Maoz and Bruce M. Russett, "Normative and Structural Causes of the Democratic Peace," *American Political Science Review* 87 (September 1993); William Dixon, "Democracy and the Peaceful Settlement of International Conflict," *American Political Science Review* 88 (March 1994); James Lee Ray, *Democracies in International Conflict* (Columbia: University of South Carolina Press, 1995); John R. Oneal and Bruce M. Russett, "The Classical Liberals Were Right: Democracy, Interdependence, and Conflict, 1950-1985," *International Studies Quarterly* 41 (June 1997); Michael Mousseau, "Democracy and Compromise in Militarized Interstate Conflicts, 1816-1992," *Journal of Conflict Resolution* 42 (June 1998).

27. Sun Tzu, *The Art of War*, edited by James Clavell (New York: Delacorte Press, 1983), 9-14.

28. Caspar Weinberger, "The Use of Military Power," Remarks delivered to the National Press Club, Washington, D.C., November 28, 1984

(<http://www.pbs.org/wgbh/pages/frontline/military/force/weinberger.html/> accessed on August 3, 2004).

29. Sun Tzu (fn. 27), 16.

30. Lewis D. Johnston and Samuel H. Williamson, "What was the GDP then?"

([Http://www.eh.net/hmit/gdp/GDPsource.htm](http://www.eh.net/hmit/gdp/GDPsource.htm), accessed August 3, 2004).

31. In a two-party, plurality voting parliamentary system, the prime minister needs 50 percent of parliament to form the government. Each of the requisite members of parliament can be elected with just over 50 percent of the vote. Therefore, the prime minister needs just over fifty percent of the voters in fifty percent of the constituencies to have backed his party.

32. This upper estimate for the North Korean winning coalition is based on personal conversations with North Korea specialists. So is the estimate of Kim Chong-il's requirements to

maintain the loyalty of his coalition.

33. NYU Department of Politics Data Page, *The Logic of Political Survival Data Source* (<http://www.nyu.edu/gsas/dept/politics/data.shtml>, accessed August 3, 2004).

34. Donald Green, Soo Yeon Kim, and David Yoon, "Dirty Pool," *International Organization*. 55 (Spring 2001).

35. All analyses are also replicated with country specific fixed effects with no material change in results.

36. A. F. K. Organski, *The Stages of Political Development* (New York: Alfred Knopf, 1965); A. F. K. Organski, *World Politics*, 2nd ed. (New York: Alfred Knopf, 1968).

37. Using the logarithm of energy consumption per capita as an alternative measure of economic development yields comparable results but for a smaller number of observations.

38. Hostlev evaluates the level of hostility reached in a dispute, with scores ranging between 1 and 5. Scores lower than 5 represent progressively lower levels of threat. Scores of 1-3 involve no use of force, while a hostility level value of 4 indicates a low level use of force.

39. We replicated these analyses controlling for total iron and steel production, per capita energy consumption, and total energy consumption as alternative indicators of economic development. All yield similar results.