The Relevance of Power in International Relations

Erik Gartzke*

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Abstract

Power is widely considered to be the quintessential causal variable in studies of interstate conflict. Yet, ambiguity persists about how power impacts war and peace. Political geographers note that power decays with distance, but pay little attention to how leaders and others may respond to an otherwise mechanical constraint. Bargaining theorists emphasize that competition can produce either war or negotiated settlements, but fail to consider the effects of variables that might condition the necessity or effectiveness of bargaining. I combine these two perspectives in a way that helps to resolve important shortcomings of each approach. A simple bargaining model illustrates how power, proximity and uncertainty affect conflict. I then provide statistical evidence of an interaction between capabilities and distance. Weak states seldom fight far from home, while conflict increases with distance (and uncertainty) for capable countries. Power appears to have little salience for dispute behavior beyond its impact in conditioning distance.

*U. of California San Diego, 9500 Gilman Ave., SSB Rm 327, La Jolla, CA 92037. E-mail: egartzke@ucsd.edu.

The most important events in international politics are explained by differences in the capabilities of states. Waltz (2000, page 52)

The causes of war and peace are mainly a function of the balance of power. Mearsheimer (1995, page 13)

1 Introduction

When (and how) does power matter in world affairs? Existing conceptions offer at least three distinct approaches. First, power can be seen as influence, governing the benefits or prerogatives nations can enjoy, or the circumstances they must endure, with or without fighting. Second, power could construct political geography, varying the impact of physical distance and differentiating conflicts among nations that are possible from those that are very unlikely. Third, power may be viewed as determining state preferences, causing the same countries under different circumstances to cooperate or to oppose one another. Of these three perspectives, the last — power as preferences — has received by far the most attention from students of international relations. Work by scholars like Kenneth Waltz and John Mearsheimer epitomize the widespread belief that power relations determine who fights whom, and when. The association between power, interests, and war is also ancient, uniting work by Morgenthau, Mahan, Clausewitz, Machiavelli, Thucydides, Sun Tzu and many other careful observers of world affairs. Virtually every relationship between power and conflict has an advocate, with the possible exception of no relationship at all.

The idea that power tells us relatively little about the motives for war, independent of proximity, will be controversial, if not entirely new. Bargaining theorists are well aware of the problematic connection between power and conflict. However, there remains considerable diversity of thinking even among bargaining theorists as to how power matters. I provide a model that combines two approaches to the theory of war, bargaining theory and political geography. I then demonstrate a curvilinear relationship between power, proximity and the probability of militarized disputes. For obvious reasons, the weak seldom fight far from home. The powerful, however, can confront whomever they choose. Increased uncertainty about whom the powerful will target leads capable countries to reverse the familiar loss-of-strength gradient, more often fighting with *distant* states.

2 Everyone Likes a Good Bargain

Harold Lasswell famously defined politics as "who gets what, when, and how." However, students of international politics have shown less interest in "who gets what" than with questions of "how." In the perennial comparison of means and ends, international security fixates on the former to the decided detriment of the latter. Warfare is studied less as a method of achieving certain political objectives as Clausewitz famously advised, than as an outcome to be understood in its own right.

The realist perspective in particular associates power relations with the prospect of interstate conflict. Structural realists argue that local, regional, or systemic (major power) parity translates into more stable interstate relationships, since rough equality in capabilities ensures that states are maximally uncertain about which side will win a contest (Waltz 1979).[1] Other realists view disparity, preponderance, or hegemony as doing more to stabilize world affairs (Organski 1958; Organski and Kugler 1980; Gilpin 1981; Blainey 1973). Imbalances minimize uncertainty about the likely victor (assuming competitors are equally resolved), making the weaker party more docile. Still others argue that multipolarity is more stable than bipolarity, as nations face the danger that enemy coalitions formed or revealed in wartime will dominate their own (Deutsch and Singer 1964).[2]

Realist theories have plenty of detractors. Liberals argue that realists underestimate the prevalence of cooperation under anarchy (Axelrod 1984; Moravcsik 1997), and are excessively pessimistic about the ability of international institutions to rein in externalities (Keohane 1986, 1998; Oye 1985). Constructivists claim that realists discount the role of community (Ruggie 1998; Barnett and Duvall 2005), or that realists ignore the social-transformative effects of ideas and identities (Wendt 1999). Rational theorists dispute the deductive rigor of realist claims (Niou and Ordeshook 1986, 1994; Niou, et al. 1989), while empirical challenges abound (Bueno de Mesquita and Lalman 1988, 1992; Bueno de Mesquita 2003; Huth, et al. 1993; Stam and Reiter 1998; Schroeder 1994).[3]

[1] It is often argued that structural realism is a "systemic theory" that must be studied and tested at the system level. This is simply not correct. Like all realists, Waltz emphasizes the atomistic behavior of egoists operating under anarchy. "A balance-of-power theory, properly stated, begins with assumptions about states" (Waltz 1979, page 118). System structure evolves up from individual units (states) only because the units are enmeshed in *pre-existing* dyadic power relations. To form blocs (poles), states must be motivated by the local balance of power. "Balance-of-power theory is microtheory precisely in the economist's sense. The system, like a market in economics, is made by the actions and interactions of its units, and the theory is based on assumptions about their behavior" (1979, page 118).

[2] Contrasting claims about polarity involve different assumptions about risk propensity (Bueno de Mesquita 1981).

[3] Clarke (2001) re-estimates Huth et al. (1993) and Stam and Reiter (1998) using strategic nonnested models.

Given the scope and intensity of criticism from multiple perspectives, it is surprising to note the near absence of attacks aimed at the bedrock realist association between power and conflict. Indeed, traditional critics generally adopt realist interpretations to explain why states do occasionally fight. Opponents find themselves making normative ("power should not matter so much"), or inclusionist ("other variables also matter") arguments against the realist assertion of the centrality of war.[4] Much less attention has been devoted to questioning the basic premise that conflict itself, whether ubiquitous as realists claim or exceptional as critics charge, is a creature of power. This consensus is doubly surprising considering that realism does not appear to provide a coherent theory of conflict.[5]

The story line from an episode of the animated television series *South Park* serves to illustrate the basic problem. In "Gnomes (Underpants Gnomes)" [episode # 217], a group of gnomes are busily engaged in appropriating childrens' undergarments. The gnomes have the following business model: 1.) Collect underpants. 2.) ??? 3.) Profit! Of course, the flaw in their plan, as even the *South Park* kids quickly recognize, is that there is no second step. The gnomes have failed to develop the causal connection between stockpiling underwear and revenue. They have simply assumed that profits follow from used underpants. Presumably, the underwear must be sold, but to whom, for what, and how? This oversight renders the entire enterprise futile, absurd, and funny.

Now imagine that instead of profits, the underpants gnomes are intent on world domination. Their plan might look something like this: 1.) Collect power 2.) ??? 3.) War! Without a clear understanding of *how* power begets conflict, the gnomes' efforts lead to the same kind of non-sequitor logic as stockpiling underpants. Power could lead to war, or it could be experienced as influence. Power can manifest *either* as force or the shadow of force. The presence of a duality between power and conflict, and the lack of a clear causal connection between the accumulation of power and the probability of war reflects widespread scholarly inattention to the second critical step. It is as if researchers have lavished their efforts on constructing the abutments to a substantial bridge, but forgotten to build the bridge itself. Indeed, the proliferation of claims linking power with conflict is indicative of considerable ambiguity about how the two variables actually interrelate.

[4]Even the "lawlike" democratic peace observation is characterized by proponents as adjunct to power politics. "Of course, realist principles still dominate interstate relations between many states" Oneal, et al. (2003, page 389).

[5]It is widely recognized that structural realism lacks a theory of "normal" war. However, realists also have difficulty explaining systemic conflicts if competition embodies a duality between negotiation and violence (c.f. Fearon 1995).

Blainey (1973) was among the first to address the problem of the missing middle step. Whatever causes conflict must typically be resolved by fighting in order for a contest to end. Blainey rejects the idea that power relations first foment, and later remove, the need for force. If, for example, preponderance sparks a contest, then fighting must produce parity for the contest to end. Conversely, wars precipitated by parity must generally require disparity to terminate. Instead, Blainey argues that conflict is caused by uncertainty about power relations. War is a ruthless teacher. Misperceptions are remedied as fighting reveals actual capabilities. Force comes full circle as combatants agree about the likely consequences of continued fighting. Indeed, to the degree that actors agree about relative power in peacetime, the exercise of force becomes redundant. Variation in perceptions about power relations, rather than the relationships themselves, resolve the duality.

Fearon (1995) extends Blainey's initial insights, reformulating them within a rationalist theoretical framework, and providing a more comprehensive logical typology of the causes of war. According to Fearon, three mechanisms exist that can make countries prefer force to diplomacy. Briefly, nations can clash when they are uncertain about the probability of victory, or when influence cannot be exercised through peaceful means due to indivisibilities or commitment problems. Leaders need not be deluded about an opponent's weaknesses, or irrationally optimistic about their own martial potency. Instead, decision makers can simply err or be misinformed. Again, power relations are not the cause of war *per se*. It is what nations know, or don't know, about power, and the dynamic process of evolving relative power that are said to be responsible for costly contests.

Bargaining theories have proven remarkably appealing, particularly given the current paucity of evidence to substantiate the perspective. While logically compelling, theoretical applications of the bargaining approach have proven difficult to test (Schultz 2001). Several studies seek to isolate relationships indicative of signaling (Fearon 1994; Schultz 1998; Partell and Palmer 1999), but this evidence is circumstantial and contested (Downes and Sechser 2010). Others focus on the relationship between power and the distribution of resources (Powell 1999; Reed, et al. 2008). Despite these and other studies, bargaining theories rest heavily on logical plausibility and lightly on empirical support. Details about how bargaining functions are absent or speculative. To move forward, researchers will need to unearth and test additional implications of the bargaining approach.

3 Beam me Up, Scotty

If bargaining theories offer advantages over traditional approaches in addressing the missing link between motive/opportunity and the method for conflict, existing approaches unite with realism and other mainstream theories in a somewhat surprising indifference to physical space.[6] Place is perhaps not so interesting to students of politics as are questions of agency or structure. Yet, geography clearly determines which enemies a nation can confront easily, and which are difficult to reach. Proximity may also affect affinities and animosities. However, precisely because distance is not amenable to politics, geography has special salience for bargaining. Geography conditions where bargaining failures are likely to lead to war, and where material factors, such as power, are more salient. This contingency in turn offers an avenue for testing of bargaining theories.

In the original television series *Star Trek*, the five year mission of the starship *Enterprise* to explore strange new worlds placed Captain James T. Kirk and his crew in serial jeopardy. Each episode, Kirk would call for "more power, Scotty," only to be told that the capabilities of the *Enterprise* were at their limits. Sometimes, power involved inflicting or defending against harm (shields, phasers, photon torpedoes). On other occasions, Scotty's warp drives overcame the vast distances of space. These two uses of power differ in ways that are relevant to theories of conflict.

To the degree that competition is zero sum, variables such as power or capabilities that strengthen (weaken) a given actor have the converse effect on opponents. A country is only more powerful in relation to another nation that is by the same token less powerful. If one country becomes weaker, this need not decrease the likelihood that it experiences war if weakness invites aggression from opponents. Conversely, increasing a nation's capabilities may diminish the prospect that the country will be attacked, but only by increasing the ability for the newly capable country to act aggressively. Conflict can be avoided if strength is combined with a lack of interest in altering the status quo, but peace then relies on factors beyond mere material power (Slantchev 2005).

Distance or proximity are not zero sum; geographical conditions that make it harder for one country to assail another also make it harder for the second country to attack the first. It is not

[6] Exceptions include Most and Starr (1990); Bremer (1992); Brecher and Wilkenfeld (1997); and Lemke and Reed (2001). Classical works include Mahan (1915; 1987[1890]), Mackinder (1962[1919]), and Spykman (1942; 1944).

clear how, for example, one nation could be proximate to an adversary, while the adversary is at the same time far from the first nation. The non-zero sum nature of changes in proximity mean that distance can have a considerable effect on the probability of warfare, at least when both nations are weak. This distinction helps to explain why geography can discourage conflict more effectively than power relations. Neighboring nations may be willing and able to fight each other if dissatisfied, but as the distance between states increases, *both nations* can eventually prefer not to initiate a war.

If space proves more peaceful than most episodes of *Star Trek*, it will probably be because there is so much of it. Habitable planets are separated by vast distances that are bound to keep interplanetary contact, let alone conflict, to a minimum. To induce disputes, the writers on *Star Trek* were forced to fudge their physics (warp speed) and fill space with an implausible density of sentient beings. Episodes in which the crew of the *Enterprise* sat idly as the starship traversed an endless expanse of galactic nothingness would not sell aftershave or dishwasher detergent. Terrestrial conflict is bound to differ from war in space in part because populations are much closer together. Human beings typically need only travel short distances before bumping into one another. Countries cannot be moved around so that all are far apart and no pair of nations is able to fight.

The concept of a loss-of-strength gradient, most notably pursued by Kenneth Boulding (1962), captures the variable impact of capabilities across space. Powerful states can overcome logistical or geographic barriers, while opponents that are weak and distant are incapable of aggression. Even capable countries find their ability to influence diminished by distance, while defenders are not much affected by whether invaders are neighbors or are far from home. Whatever the functional relationship between power and war, geography is likely to ensure that the relationship is maintained in some contexts and fails under other circumstances. The variable impact of power and distance implies the need to interact capabilities with proximity to create a rudimentary political geography.

Embrace for a moment the structural realist view that parity makes states less likely to fight. Should this claim apply equally to contiguous and distant country pairs? If so, then Boulding's framework implies that the capabilities of dyads must vary with the distance between member states. Under the logic that parity makes peace, neighboring nations must have about equally capable armies in order to deter one another. More distant countries need not conform so closely to this constraint, as the power exerted far from home must be diminished by distance. If comparably capable states are separated by considerable space, then for A to attack B, A must accept a significant *inferiority* in terms of what can actually be brought to bear on its opponent. Similarly, B will be weak relative to A if B seeks to prosecute a war on or near A's territory. In effect, distance has taken a dyad in which states are roughly equally matched and created two directed dyads, each of which contains a potential attacker that is weak relative to its target. If instead A or B is stronger in military terms than its opponent, physical separation can create conditions *equivalent to parity*, assuming an appropriate gradient for the stronger state's loss-of-strength.

Bargaining theories face an analogous, though different, confrontation with geography. While at least one of Fearon's (1995) typology of three causes may be necessary for war to occur, it does not follow that these rationalist explanations are sufficient for the onset of a contest. Nations that are weak and/or physically distant from each other are unlikely to go to war, regardless of whether either faces strategic uncertainty, indivisibilities, or a problem committing to international agreements. Belize and Bhutan are just not capable of fighting each other. More generally, the effect of the loss-of-strength gradient is to prevent contests among states whose power projection capabilities are weak or modest, regardless of other motives states may have to use force. Only for nations that are physically capable of projecting power is Fearon's typology likely to prove relevant.

The bargaining approach is only likely to prove empirically informative for some relationships, particularly those involving neighbors or more capable countries.[7] Yet, in these relationships it is likely to prove critical. Indeed, integrating geography into bargaining/informational theory suggests that, in contrast to Boulding's predictions about the consequences of political geography, the probability of contests involving the most powerful states should actually *increase* with distance. This non-intuitive prediction can be generated in several ways, but I focus here on the interaction of the loss-of-strength gradient with so-called "corner solutions." In many contexts, competitors can divide up disputed stakes to find mutually acceptable bargains. Changes in conditions affecting the appeal of fighting translate into different "interior solutions," where different bargains absorb some or all of the effect of varying state power or the willingness of potential combatants to fight.

[7] The sample of dyads affected by bargaining problems is similar to the notion of "politically relevant dyads." Note, however, that here the conception of relevance is being generated theoretically, not simply as a sampling assumption.

In a “corner solution” one side is prepared to concede everything under dispute in order to avoid a contest. Further advantages for the victor cannot be used to pursue additional concessions, since everything has already been conceded. Additional capabilities or resolve result in a reduced probability of warfare, since advantages cannot be converted into more advantageous bargains. Corner solutions also limit the salience of asymmetric information. If for example a powerful state is likely to win a contest regardless of its resolve, then appearing more resolved for the powerful state has little or no effect on bargaining, since the capable country already receives its most preferred outcome. Under these conditions, strategic uncertainty is largely irrelevant, since it cannot result in different bargains. Powerful states get what they want without having to fight and conversely cannot get much more from fighting. Targets recognize that accommodating even the least resolved or capable opponent is preferred to a contest, since power and the boundedness of the stakes trumps the usual willingness of competitors to accept some risk of war in return for better bargains.

Distance weakens effective capabilities, but the combination of geography and bargaining generates different consequences for powerful states than for the less capable. For the powerful, interior solutions begin to emerge with the loss-of-strength gradient, where bargains differ based on different capabilities, resolve, or war costs. Increasing the salience of uncertainty in turn raises the prospect of bargaining failures. Pooling due to corner solutions is most likely to occur where power is most potent (i.e. capable states with proximate targets). This means that the risk of a contest actually contradicts the nominal effect of the loss-of-strength gradient. Since the capable can fight anywhere they like, the binding constraint on powerful states is uncertainty about where they have the will to fight. Close to home, uncertainty is minimized by several factors, including the prospect that high costs or low resolve are still sufficient to motivate warfare, given sufficient military advantages.

Weak states are less dispute prone with distance, both because of the loss-of-strength gradient, and because of the opposite corner solution. A weak challenger can prefer conceding all of the stakes, rather than fighting a losing and costly contest with a distant opponent. Uncertainty is not relevant because all types of weak challenger find a distant war unappealing. A target cannot prefer to refuse an offer in which the challenger concedes everything. Once a challenger prefers to concede, the probability of fighting cannot increase given the effect of the loss-of-strength gradient.

4 The Always Simple Bargaining Model

Imagine a world of just two countries (A, B). Nature (N) randomly assigns these countries to the role of potential challenger (i), or target (j). Players compete over some disputed goods or prerogatives, represented by an issue space of unit interval. Without loss of generality, I place player i's ideal point at zero, while j most prefers one. Players have linear loss utility functions. Each player has private information about its cost for fighting. Let types $(c_{(i,j)})$, be drawn randomly by N.[8] The distribution of types for each player is continuous and uniformly distributed over the interval $t_{(i,j)} \in [\bar{t}, 1]$, where $0 < \bar{t} < 1$.[9]

Assume that each state has some finite capability to harm its opponent. The distributional effect of a contest can be expressed in terms of the probability p that player i wins. Victory is some function of the capabilities (power) of combatants, plus other elements. Rather than assuming a particular formulation of the relationship between power and victory, I can treat p as a parameter. However, I also want to model the effects of proximity/distance on power and the probability of victory. Challengers suffer the loss of strength gradient because they must "take the fight to the enemy." Let p_0 equal the probability that i wins a contest against a contiguous opponent j. For more distant opponents, I assume that the loss of strength takes the following functional form:

$$p = \frac{p_0}{1 + \alpha k^{\beta}} \tag{1}$$

where p is the probability that player i wins at distance k from its home territory, and where α and β are positive parameters. While variables can take on any values, it is useful to assume that α is small $(\alpha < 0.001)$, so that k can be measured in standard units, such as miles. Similarly, a value for $\beta < 1$ is consistent with a declining marginal impact for the gradient, as Boulding preferred.

The sequence of play is as follows: N assigns each player a type and a role (challenger i, or target j). For simplicity, I assume that the status quo point q is at j's ideal point $(q = 1)$.[10] Assuming a status quo point in the interior implies that both states might be revisionist powers.

[8] One can also model the typespace in terms of the "slope" of players' utility for outcomes on the issue space.

[9] The interval chosen is entirely arbitrary, but these results should generalize to any other choice of interval.

[10] q should be in the Pareto set $(0, 1)$, which also helps to explain why demands are bounded in the same interval.

This requires a more complex setup, while adding little to the intuition provided by the model.

After nature assigns players roles and types, the challenger decides what to offer the target (d, $0 \leq d \leq 1$). If j accepts d, the game ends with payoffs $(\frac{1-d}{t_i}, \frac{d}{t_j})$. If j refuses the demand, then i must decide whether to relent or fight j. If i does not fight, then the status quo is retained ($q = 1$). It is also possible that i incurs some reputational cost for failing to pursue its interests through force. Assume that i faces an "audience cost" equal to a, ($a \geq 0$) should it choose to back down.

If i chooses to fight, then i wins the entire stakes under dispute in the contest with probability p, and again the status quo is retained (i.e., i receives nothing) with probability $(1 - p)$. The probability of victory and payoffs for player j are just the converse. In either case, each player pays some price for fighting $c_{(i,j)}$, $c > 0$. I will relax the assumption later, but for now let us imagine that the costs of fighting are exogenous and fixed. Utility functions for each player appear below:

$$U_i = (1-r) * ((1-d)/t_i) + r * ((1-f) * (-a) + f * (p * (1/t_i) - c_i)) \tag{2}$$

$$U_j = (1-r) * (d/t_j) + r * ((1-f) * (1/t_j) + f * ((1-p) * (1/t_j) - c_j)) \tag{3}$$

where r is j's decision to accept ($r = 0$) or reject ($r = 1$) i's offer, and f is i's fight decision. Substituting Eq 1 for p in Eq 2 and Eq 3 and simplifying the resulting equations produces:

$$U_i = \frac{(d-1)(r-1)}{t_i} + r\left(a(f-1) - c_i f + \frac{f p_0}{t_i(1+\alpha k^{\beta})}\right) \tag{2a}$$

$$U_j = -\frac{d\left(1+\alpha k^{\beta}\right)(r-1) + r\left(f p_0 + c_j f t_j + \alpha k^{\beta} * (c_j f t_j - 1) - 1\right)}{t_j\left(1+\alpha k^{\beta}\right)} \tag{3a}$$

The game if solved using the Bayesian Perfect Equilibrium solution concept. Backward inducting, i must decide whether to fight. Define $t_i' \equiv \frac{-p_0}{(a-c_i)\left(1+\alpha k^{\beta}\right)}$ as the type i just indifferent between fighting and backing down. Types are in the denominator, so if $t_i \geq t_i'$, i backs down. Else, i fights.

Before i's fight decision, j must choose whether to accept or reject d. Player j first estimates the probability that i will choose to fight if j turns down i's offer. $Prob\,(f = 1|r = 1)$ simply equals the range of types i that prefer to fight in the next stage, $(\bar{t}_i - t')$, divided by the domain of types i, $(\bar{t}_i, 1)$. As with all probabilities, the fraction is bounded by the unit interval, $1 \geq \frac{(\bar{t}_i - t')}{(\bar{t}_i - 1)} \geq 0$.

Substituting for f in j's utility function and taking the partial derivative with respect to r yields:

$$\begin{aligned}\frac{\partial U_j}{\partial r} &= \left(\frac{-1}{t_j\left(1+\alpha k^{\beta}\right)}\right)\left\{d+\alpha k^{\beta}d-\left[p_0^2+\left(1+\alpha k^{\beta}\right)p_0\left(\bar{t}_i\left(a-c_i\right)+c_j t_j\right)+\left(a-c_i\right)\right.\right.\\ &\left.\left.\left(1+\alpha k^{\beta}\right)^2\left(1+\bar{t}_i\left(c_j t_j-1\right)\right)\right]/\left[\left(a-c_i\right)\left(1+\alpha k^{\beta}\right)\left(1-\bar{t}_i\right)\right]\right\} \qquad (4)\end{aligned}$$

Setting $\frac{\partial U_j}{\partial r}=0$, solving for t_j and simplifying the resulting equation yields t'_j, the type of player j that is just indifferent between accepting i's offer (d) and rejecting the offer:

$$t'_j \equiv \frac{\left(a-c_i\right)\left(d-1\right)\left(1+\alpha k^{\beta}\right)^2\left(1-\bar{t}_i\right)-\left(a-c_i\right)\left(1+\alpha k^{\beta}\right)p_0\bar{t}_i-p_0^2}{c_j\left(1+\alpha k^{\beta}\right)\left(p_0+\left(a-c_i\right)\left(1+\alpha k^{\beta}\right)\bar{t}_i\right)} \qquad (5)$$

Player i can now use t'_j to estimate the probability that j will reject a given demand d as $Prob\left(r=1|d\right)=\frac{\bar{t}_j-t'_j}{\bar{t}_j-1}$. Again, $1\geq Prob\left(r=1|d\right)\geq 0$. Substituting this probability for r in Eq 2a, i can determine its optimal offer. Taking the partial of i's utility function with respect to d, setting the result equal to zero, solving for d and simplifying produces $d^{\star}$, i's optimal offer:

$$\begin{aligned}d^{\star} &= \left[c_j t_i\left(p_0+\left(a-c_i\right)\left(1+\alpha k^{beta}\right)\bar{t}_i\right)\left(1-\bar{t}_j\right)\left(\frac{1}{t_i}+\frac{p_0^2}{c_j\left(1+\alpha k^{\beta}\right)t_i\left(p_0+(a-c_i)\left(1+\alpha k^{\beta}\right)\bar{t}_i\right)(1-\bar{t}_j)}\right.\right.\\ &+\frac{2(a-c_i)\left(1+\alpha k^{\beta}\right)(1-\bar{t}_i)}{c_j t_i\left(p_0+(a-c_i)\left(1+\alpha k^{\beta}\right)\bar{t}_i\right)(1-\bar{t}_j)}-\frac{(a-c_i)\left(1+\alpha k^{\beta}\right)\left(a(f-1)-c_i f+\frac{f p_0}{t_i+\alpha k^{\beta}t_i}\right)(1-\bar{t}_i)}{c_j\left(p_0+(a-c_i)\left(1+\alpha k^{\beta}\right)\bar{t}_i\right)(1-\bar{t}_j)}\\ &\left.\left.+\frac{(a-c_i)p_0\bar{t}_i}{c_j t_i\left(p_0+(a-c_i)\left(1+\alpha k^{\beta}\right)\bar{t}_i\right)(1-\bar{t}_j)}+\frac{\bar{t}_j}{t_i(1-\bar{t}_j)}\right)\right]/\left[2\left(a-c_i\right)\left(1+\alpha k^{beta}\right)\left(1-\bar{t}_i\right)\right] \qquad (6)\end{aligned}$$

Substituting $d^{\star}$ back into t'_i and t'_j makes it possible to solve for $Prob\left(f=1|r=1\right)$ and $Prob\left(r=1|d\right)$ explicitly. The resulting equations are cumbersome, so I do not include them here. I next review the equilibria and players' optimal strategies and then provide a graphical representation of the probability of conflict in the game for values of the key parameters geographic distance (k) and capabilities (p_0). Player i's optimal demand ($d^{\star}$) equals Eq 6 if $1\geq$ Eq $6\geq 0$. Else, if Eq $6<0$, $d^{\star}=0$, and if Eq >1, $d^{\star}=1$. Player j rejects $d^{\star}$ if $t_j<t'_j$. Else, j accepts $d^{\star}$, with payoffs $\left(\frac{1-d^{\star}}{t_i},\frac{d^{\star}}{t_j}\right)$ for i and j respectively. If j does not accept $d^{\star}$, then i fights if $t_i<t'_i$, with expected payoffs $\frac{p}{t_i}-c_i$ and $\frac{1-p}{t_j}-c_i$. If instead, $t_i\geq t'_i$, then i incurs $-a$, while j receives $\frac{1}{t_j}$.

The probability of a costly contest between i and j is thus equal to the joint probability that both $t_j < t'_j$ and $t_i < t'_i$ (that j rejects $d^\star$ and that i chooses to fight). Label this probability $Prob\,(war)$. Eq 7 reports the partial derivative of $Prob\,(war)$ with respect to k, metric distance.

$$\frac{\partial Prob\,(war)}{\partial k} = \frac{\alpha\beta k^{\beta-1}p_0\left(-2p_0+\left(1+\alpha k^{\beta}\right)\left(-a(f(1-\bar{t}_i)+\bar{t}_i)+c_i(f+\bar{t}_i-f\bar{t}_i)+c_j(1-2\bar{t}_j)\right)\right)}{2(a-c_i)c_j\left(1+\alpha k^{\beta}\right)^3(1-\bar{t}_i)(1-\bar{t}_j)} \tag{7}$$

Setting Eq 7 equal to zero and solving for p_0 yields $\bar{p}_0$, such that the peace-producing effects of the loss-of-strength gradient and conflict-producing effects of interior solutions just cancel.

$$\bar{p}_0 = \frac{1}{2}\left(1+\alpha k^{\beta}\right)\left(-a\left(f\left(1-\bar{t}_i\right)+\bar{t}_i\right)+c_i\left(f+\bar{t}_i-f\bar{t}_i\right)+c_j\left(1-2\bar{t}_j\right)\right) \tag{8}$$

For challengers with capabilities less than $\bar{p}_0$, the probability of a contest is declining in k. For $p_0 > \bar{p}_0$, $Prob\,(war)$ is increasing in k. Empirically, the portion of challengers that experience a decline in conflict with distance, and the portion that experience an increase in conflict depends on the estimation of parameters of the model. Nevertheless, we can derive the following hypotheses.

Hypothesis 1 *States are generally less likely to experience contests with increasing distance.*

Hypothesis 2 *Powerful states are more likely to experience contests with increasing distance.*

Figure 1 plots $Prob\,(war)$ in terms of p_0 and k for a given set of values of relevant parameters.[11] The x axis details state i's contiguous capabilities or the probability of victory (p_0). The y axis measures distance. The maximum value of 12,500 roughly equals half the distance around the world at the equator, measured in miles. The vertical (z) axis reports the probability of fighting in the model. Note the complex surface created by the interaction of the three axes. $Prob\,(war)$ is increasing in distance for high values of p_0 and decreasing in k for most other values of the capability variable. State i is more likely to make an offer that j prefers to fighting if i is powerful and j is close geographically, or if i is weak and j is distant. Both Boulding's loss-of-strength gradient and what I will term an "increase-in-uncertainty gradient" are supported, under different conditions.

[11] Assumed values are as follows: $\bar{t}_i = \bar{t}_j = 0.001$, $\alpha = 0.001$, $\beta = 0.9$, $a = 0.05$, $c_i = c_j = 0.25$, $f = 1$, $t_i = 0.5$.

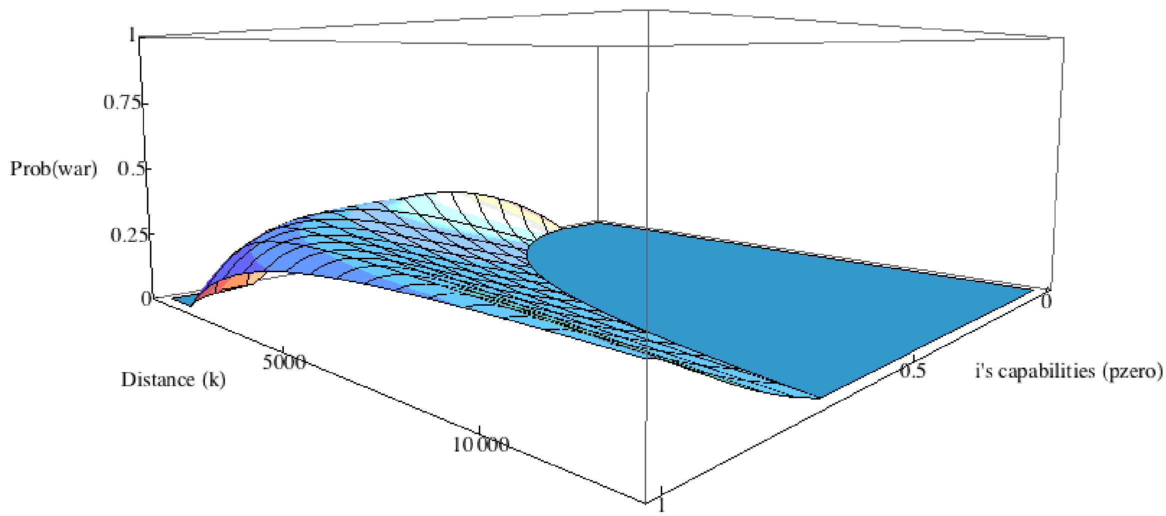

Figure 1: Relationship between Power, Proximity, and the Probability of Conflict

Hypothesis 2 is a novel implication of the model and of the joining of bargaining theory with political geography proposed here. While other research suggests that the loss-of-strength gradient may be diminished by power, time or technological innovation (Boulding 1978; Buhaug and Gleditsch 2006), no other theory predicts increased conflict with distance for powerful states.

At the same time, the effect of capabilities or the balance of power on conflict is muddy at best. First, as Figure 1 illustrates, $Prob\,(war)$ is monotonically increasing in p for distant states due both to the increase in uncertainty and to the fact that weak states are excluded by an inability to project power. For proximate states, on the other hand, the relationship is more convoluted. Powerful neighbors more often get their way without fighting, while the weak seldom initiate conflicts.

The fact that weak states are unlikely to initiate contests does not mean that no disputes will ensue. It is not practical to model the ability of the target state, j, to make endogenous counter-demands, nor is it necessary in the framework here, where I assume that the status quo point (q) is already at j's ideal point. In the empirical world, the combination of the effect of distance, and two-sided bargaining is likely to minimize the effect of power on conflict, independent of distance.[12]

Hypothesis 3 *Powerful states are no more likely to experience contests, independent of distance.*

[12] Additional extensions of the model, including endogenizing war costs, are handled in an appendix to the paper.

5 Research Design: What is power?

Scholars disagree about what power is, how it operates, how to measure it, and how to compare disparate findings that can result from different indicators (Sullivan 1990; Geller and Singer 1998). This lack of consensus regarding the putative central variable in international politics is not just disconcerting, but could also derail attempts to test theories of international conflict. However, there is much more congruence in practice than in the surrounding scholarly rhetoric. Waltz, for example, offers the following list of ingredients of power: "size of population and territory, resource endowment, economic capability, military strength, political stability and competence" (Waltz 1979, page 131). While he offers no explicit recipe, Waltz's list is strikingly similar to the Correlates of War (COW) Composite Indicators of National Capabilities (CINC). Since there are too many pitfalls with sticking to conceptual debates to allow controversies or deficiencies to prevent empirical assessment, I proceed while acknowledging the potential limitations of my efforts.

A distinction can also be made between latent and kinetic power (Mearsheimer 2001). Power represents either the ability to influence or actual acts of influencing. These versions of power can differ in one of two ways. First, since scholars disagree about which variables constitute the inputs to power, particular operationalizations could bias estimates of the effects of power on conflict if in fact omitted determinants correlate poorly with the included factors. While possible, advocates of more inclusive conceptions of power have yet to make the case that omitting these elements biases estimates of the relationship between power and conflict, as opposed to simply making estimates less efficient (Nye 2004). Since the focus here is on explaining militarized force rather than more subtle forms of influence, use of material capabilities as a measure of power is arguably sufficient.

Second, some process might intervene between nominal capabilities and national policy. This possibility is more demanding of attention in pursuing empirical analysis of power and conflict, especially since I have proposed two such processes myself. Diplomacy can short-circuit the effects of power on conflict. Influence also occurs if targets act in anticipation of the application of military capabilities, rather than after an actual use of force. I have incorporated this possibility into the analysis by considering factors that might account for a failure to anticipate capabilities (and thus that invite a use of force). More elaborate treatments of these effects awaits a theory of diplomacy.

The other intervening process proposed in this study is geography. This is explicitly integrated into the statistical model, both directly and in its interactive effect on capabilities. While certainly not complete, I assume that an adequate operationalization of power as influence, rather than simple nominal capabilities, can be had by interacting capabilities and geographic distance. For the purposes of this study, power can be defined *either* as the ability to influence — either through the use of military force, or the shadow of force — or as actual influence. While power as preferences theories are ambiguous about whether capabilities equal power, or whether power is capabilities discounted by distance, an assessment of both alternatives is the task at hand in this analysis.

Having dutifully discounted expectations, let me note that this study intentionally relies on the most conventional data, variable constructions, model specifications, and estimation procedures so that the findings are unlikely to have resulted from peculiarities of the approach. I use probit estimation to assess the effect of national material capabilities on wars and militarized disputes in the period 1816-2000. Analyses were conducted using both directed and undirected dyad years. I combat temporal dependence by adding splines and peace years (Beck, et al. 1998), correct for clustering in dyads, and use robust standard errors to address the effects of spatial dependence. Unless otherwise noted, data for this study were obtained from *EUGene* (Bennett and Stam 2000).

5.1 Data

Dependent Variables: I use Zeev Maoz's construction of dyadic militarized interstate disputes (DYMID) as the basis for three versions of the dependent variable, with a standard dichotomous coding of "1" for the initial year of a MID, a fatal MID (a militarized dispute involving at least one battle-related death), or a war (at least 1000 battle deaths) in the dyad and "0" otherwise (Gochman and Maoz 1984; Jones, et al. 1996). The Maoz data are formatted for dyadic analysis.[13]

In addition to conflict onset or initiation, I examine the location of a militarized dispute as a dependent variable. To the degree that my arguments about political geography are correct, power should be a particularly potent predictor of where, rather than whether, nations fight. Braithwaite (2009) identifies the latitude and longitude of each MID in the Correlates of War (COW) dataset.

[13]The codebook and DYMID dataset are at: `http://psfaculty.ucdavis.edu/zmaoz/`. I use the *EUGene* version.

Capabilities: COW offers the Composite Index of National Capabilities (CINC) based on six components: military spending and personnel, total and urban population, and iron & steel production and energy consumption (Singer, et al. 1972, Singer 1987). While these data are certainly not perfect (Leng 2002), they are the most widely used quantitative measure of capabilities in international relations (c.f. Bueno de Mesquita and Lalman 1988; Bremer 1992; Maoz and Russett 1993). Data coverage extends from 1816 to 2000 (Correlates of War Project 2005). Controversy continues about how best to measure power (c.f. Organski 1958; Schweller 1998), but there is no reason to believe, ex ante, that these data are biased in favor of my hypotheses, particularly given that the data collection effort was predicated on the conviction that power was a key determinant of warfare (Singer 1963; Wayman et al. 1983). I include variables for each state's CINC score and for the dyadic interaction between CINC scores. To distinguish between the direct and indirect effects of power, I introduce interaction terms between monadic CINC scores and geographic distance.

There are certainly many other ways to operationalize power relationships. For example, researchers often include a measure of the ratio of capabilities of the stronger state to the weaker state in a dyad (Bremer 1992, 1993; Oneal and Russett 1997, 1999). However, such a formulation assumes a particular structure to power relations. A ratio also conflates rough parity of two weak states with that of two strong states, of critical concern when examining the interaction of power and distance (Hegre 2008). Allowing each CINC score to make its own contribution is more general.

Geographic Contiguity and Distance: States that are far apart are less likely to fight each other (Bremer 1992; Maoz and Russett 1992; Buhaug and Gleditsch 2006). One of the contentions of this study is that much of the apparent effect of capabilities in influencing conflict is really power mitigating distance. To assist in interpreting the results, I use the metric distance between national capitals. I also include a measure of contiguity that codes the proximity of land borders and the distance separating countries by water. The contiguity variable is expected to increase MID likelihood while distance should decrease militarized disputes and wars (Diehl 1985; Senese 2005).[14]

Military Alliances [15]: Alliances are formal agreements intended to influence conflict behavior.

[14]It is conventional to include both contiguity and distance in the models. Omitting contiguity never results in a positive, significant effect for either CINC variable, though occasionally, these are negative and marginally significant.

[15]For a discussion of methodological problems with control variables, see Achen (2005); Ray (2005); Clarke (2005).

The alliance variable is dichotomous, coding the presence of a defense pact in the dyad based on COW alliance data (Singer and Small 1966; Small and Singer 1990; Gibler and Sarkees 2004).

Major Power Status: Powerful countries are more active internationally, leading more often to warfare. The major power variable is a dummy coded "1" if at least one state in a dyad is a major power according to the COW list. Since the variable confounds some of the distinctions I make between interests and distance, I only include major power in some of the econometric models.

Democracy: The Polity IV project codes regime type (Jaggers and Gurr. 1995). I construct annual democracy scores for each state as the difference between Polity's DEMOC and AUTOC variables, as is conventional. I adopt the method recommended in the Polity codebook (Marshall and Jaggers 2002, pages 15-16) for recoding cases of interregnum and transition. To compute a dyad-level democracy score, I apply Dixon's (1994) weak-link logic (in dyadic analysis), or the monadic values plus an interaction term (in directed dyads), much as with the capabilities variables.

Temporal Splines: A well-established problem in Time-Series–Cross-Section Analysis (TSCS) is the non-independence of observations. Beck et al. (1998) recommend the use of a set of lagged dependent variables to control for temporal dependence. This approach has become the standard in the literature. I create four "spline" variables for each of the three dependent variables.[16]

6 Analysis

Results for the study are organized into four tables and five figures.[17] The first two tables contain six regressions each, while the third table includes four regressions and the fourth table lists two regressions. Table 1 reports dyadic regressions of "All MIDs", "Fatal MIDs", and "Wars" in sets of two regressions each. In each pairing, the first regression examines the effect of aggregate material capabilities, while the second regression interacts capabilities and distance. Table 2 continues the analysis of power and conflict in a sample of directed dyads, this time focusing on "MID Initiations", "Fatal MID Init." and "War Initiations." Details of Tables 3 and 4 are discussed later in the text.

The first two regressions in Table 1 involve all dispute behavior among pairs of states. The

[16]Coefficients and standard errors for spline variables are not reported since they lack a substantive interpretation.
[17]A *STATA* "do" file is available from the author that reproduces all aspects of data manipulation and analysis.

"All MIDs" models include the minimum of right-hand-side variables, just monadic CINC scores, distance, contiguity, "peaceyears" and temporal splines (suppressed in the table to save space). As the first column of coefficients and standard errors appear to demonstrate, power (or at least capabilities) has a statistically and substantively meaningful impact on whether states fight. The greater the power of either state in a dyad, the more likely it is to experience a MID with the other state. Contiguity and distance are also significant predictors of conflict (higher contiguity values imply a looser definition of contiguity). Still, this specification assumes that the effect of power on conflict is unrelated to proximity, a claim contradicted by intuition and by the theoretical model.

The second column of coefficient estimates and standard errors in Table 1 adds interaction terms between the two monadic CINC variables and the distance variable. This makes it possible to differentiate the effect of power on opportunity, and on willingness (Most and Starr 1990; Siverson and Starr 1990). These results suggest that the major impact of capabilities is in the ability to overcome distance. The interaction terms between distance and CINC scores are both highly statistically significant, while the CINC scores themselves are no longer significant determinants of whether states fight. The distance variable, however, continues to significantly influence dispute propensities. Contiguity also remains substantially as before. By parsing out the portion of capabilities impacting the ability to fight, and the portion associated with willingness, we find that there is not much of the latter. State power does not seem to matter much in motivating disputes.

Many of the disputes in the all MIDs sample involve relatively minor clashes. Non-fatal MIDs may fail to represent the kinds of cases of violent conflict theories of power in international relations seek to explain. To address this concern, the third and fourth columns list coefficient estimates and standard errors for the determinants of militarized disputes involving at least one battlefield fatality. I also add two variables to the previous (minimal) model specification. First, I include a measure of the interaction between the capabilities of states in the dyad. Different arguments about power relations may lead to various non-linear effects. Second, I add a dummy variable for alliance status. Interacting CINC scores does not appear to reveal any statistically significant relationship. Alliance ties are marginally statistically significant only in the second (with CINC $\times$ Distance) model. These results parallel those reported for the all MIDs sample. The impact of

Table 1: The Effect of Capabilities and Other Variables on Conflict (Probit, Dyad years)

	All MIDs		**Fatal MIDs**		**Wars**	
Variable	Coeff (S.E.)	Coeff (S.E.)	Coeff (S.E.)	Coeff (S.E.)	Coeff (S.E.)	Coeff (S.E.)
$CINC_A$	3.721***	0.501	2.834***	0.418	1.995***	0.596
	(0.301)	(0.609)	(0.481)	(0.808)	(0.591)	(0.660)
$CINC_B$	4.446***	-0.362	2.286**	-0.837	3.045***	0.932
	(0.450)	(1.230)	(0.773)	(1.112)	(0.770)	(0.807)
$CINC_A \times$ Distance		0.520***		0.472***		0.001***
		(0.082)		(0.113)		(0.000)
$CINC_B \times$ Distance		0.731***		0.664***		0.001***
		(0.153)		(0.153)		(0.000)
$CINC_A \times CINC_B$			11.566	5.908		
			(8.274)	(5.757)		
Distance (ln)	-0.165***	-0.197***	-0.097***	-0.130***	0.000*	0.000***
	(0.006)	(0.006)	(0.016)	(0.016)	(0.000)	(0.000)
Contiguity	-0.117***	-0.114***	0.671***	0.651***	0.930***	0.877***
	(0.019)	(0.019)	(0.120)	(0.115)	(0.105)	(0.105)
Alliance			-0.136	-0.148†	-0.130	-0.125
			(0.078)	(0.074)	(0.111)	(0.107)
Major Power					0.309*	0.380***
					(0.110)	(0.101)
Democracy Low					-0.059**	-0.061**
					(0.019)	(0.020)
Democracy High					0.032†	0.028
					(0.015)	(0.015)
Intercept	-0.374**	-0.197	-2.277***	-2.116***	-3.318***	-3.142***
	(0.130)	(0.123)	(0.160)	(0.159)	(0.133)	(0.144)
N	656621	656621	656621	656621	533097	533097
Log-likelihood	-12279.445	-12063.424	-2979.71	-2921.582	-1147.073	-1130.289
$\chi^2_{(9,11,11,13,13,15)}$	1572.343	1979.258	884.389	963.22	689.311	426.657

Significance levels : † : 5% $*$: 1% $**$: 0.5% $***$: 0.1% Splines suppressed to save space.

power on fatal MID onsets appears to be largely a function of how power mitigates distance.

The last two regressions in Table 1 examine COW wars. I drop the interaction term between monadic CINC scores as it was not statistically significant, and to limit unnecessary non-linearities imposed on the model. I add controls for major power status and regime type. Monadic CINC scores are again insignificant once the interaction terms between capabilities and distance are introduced. Major power dyads are more warlike, while democratic dyads are less inclined to experience wars.

Figure 2 plots the results from the final regression from Table 1 ("Wars", *CINC* $\times$ *Distance* interaction terms) showing the probability of war under conditions detailed on the x axis ("CINC A") and y axis ("Distance"). Because it is impossible to depict relationships in more than three dimensions, I fix State B's CINC score at the global mean (just below 1% of global capabilities).[18] All other interval variables are held at their means, while dummy variables take on modal values.

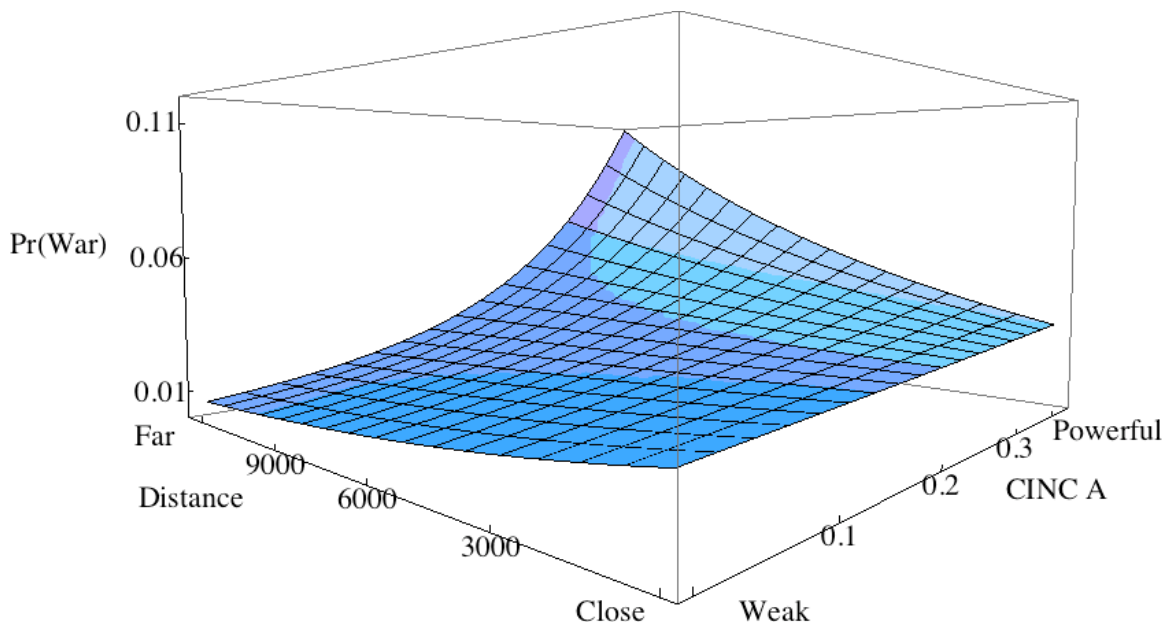

Figure 2: The Impact of Power and Proximity on War (Probit Estimates, Model 6, Table 1)

The surface representing the probability of a war is curled up at opposite ends. The high points, where war is most likely, occur at the front and back of the image, between weak-proximate states, and between distant states when at least one member of the dyad is a capable country. On one

[18]Other values of $CINC_B$ can be used, or State A can be the state with fixed CINC score, with equivalent results.

end of the distance scale, proximate states experience slightly fewer disputes as one country in the dyad becomes more powerful. On the other end of the scale, distant countries are much less likely to fight if both states in the dyad are weak. The constraining effect of geography on weak states is so strong that the increase in disputes for distant powerful states is swamped by the pacifying tendencies of distance for weaker pairings. Thus, power is conditioned by proximity. If one simply estimates the effect of power on conflict — ignoring the interaction between proximity and power — then it looks as if power increases conflict propensity. In actual fact, however, the effect of power on dispute propensity is almost wholly explained by the effect of power on distance. Powerful states are slightly less likely to fight their neighbors but much more likely to fight far from home. The role of power in increasing conflict among distant states is a unique implication of bargaining theory.

Table 2 extends the analysis to directed dyads, making it possible to examine separately the effect of power on potential initiators and targets. The table again lists three pairs of regressions. Each pair of regressions roughly conforms to the regressions in Table 1, but with additional control variables. The first pair of regressions examines the determinants of "MID Initiations" for all militarized disputes. In the absence of the *CINC* × *Distance* interaction terms, capable states appear more likely to initiate disputes, and more likely to become targets of MIDs. Introducing the interaction terms again leads the direct effects of capabilities to become statistically insignificant. In comparing the two sets of coefficients and standard errors, capabilities again clearly influence conflict primarily through mitigating distance. Other independent variables perform as expected.

Interpreting the statistical significance and substantive impact of interaction effects and their component variables can be tricky (Braumoeller 2004). It is not certain from tabular regression results whether the significance or substantive impact of interaction terms and their components are meaningful. Similarly, standard significance tests cannot indicate whether non-linear relationships are statistically significant for all values of relevant variables. It might well be that an interesting non-linear effect appears statistically significant only where the interesting effect is absent. If the apparent increase in MID behavior with distance for powerful states is not in itself statistically significant, then this would considerably weaken the validity of the results reported here.

To address these concerns, and as an additional check on the results reported in Figure 2 and

Table 2: The Effect of Capabilities and Other Variables on Conflict (Probit, Directed dyad years)

	MID Initiations		**Fatal MID Init.**		**War Initiations**	
Variable	Coeff (S.E.)	Coeff (S.E.)	Coeff (S.E.)	Coeff (S.E.)	Coeff (S.E.)	Coeff (S.E.)
$CINC_A$	2.257***	0.162	1.864***	-1.035	1.799**	-0.121
	(0.338)	(0.405)	(0.552)	(0.717)	(0.590)	(0.831)
$CINC_B$	2.375***	-0.318	1.969***	-0.512	2.717*	1.080
	(0.474)	(0.633)	(0.538)	(0.671)	(0.992)	(1.290)
$CINC_A \times$ Distance		0.001***		0.001***		0.001***
		(0.000)		(0.000)		(0.000)
$CINC_B \times$ Distance		0.001***		0.001***		0.001***
		(0.000)		(0.000)		(0.000)
Distance	0.000***	0.000***	0.000***	0.000***	0.000**	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Contiguity	-0.205***	-0.191***	-0.212***	-0.206***	-0.178***	-0.172***
	(0.010)	(0.009)	(0.012)	(0.012)	(0.019)	(0.022)
Alliance	-0.009	-0.027	-0.164***	-0.171***	-0.237†	-0.156
	(0.039)	(0.037)	(0.045)	(0.043)	(0.098)	(0.098)
Major $Power_A$	0.442***	0.514***	0.376***	0.463***	0.507***	0.595***
	(0.059)	(0.056)	(0.087)	(0.085)	(0.106)	(0.105)
Major $Power_B$	0.185*	0.266***	0.438***	0.506***	-0.079	0.019
	(0.072)	(0.071)	(0.079)	(0.079)	(0.215)	(0.218)
$Major_A \times Major_B$	-0.130	-0.079	-0.106	-0.007	-0.020	-0.049
	(0.100)	(0.078)	(0.108)	(0.097)	(0.173)	(0.175)
$Democracy_A$	0.051***	0.046***				0.036*
	(0.006)	(0.006)				(0.014)
$Democracy_B$	0.059***	0.055***				0.044†
	(0.006)	(0.006)				(0.018)
$Dem._A \times Dem._B$	-0.010***	-0.010***				-0.012***
	(0.001)	(0.001)				(0.003)
Intercept	-1.428***	-1.300***	-0.734***	-0.618***	-2.510*	-2.515***
	(0.060)	(0.058)	(0.077)	(0.074)	(0.133)	(0.116)
N	1066194	1066194	1311994	1311994	1313242	1066194
Log-likelihood	-14063.79	-13828.073	-11822.855	-11588.521	-1361.829	-1262.026
$\chi^2_{(16,18,13,15,13,18)}$	3076.052	3288.876	2380.902	2172.78	970.675	530.513

Significance levels : † : 5% $*$: 1% $**$: 0.5% $***$: 0.1% Splines suppressed to save space.

the tables, I plot the predicted relationship between capabilities, distance, and militarized disputes using the CLARIFY software (Tomz, et al. 2003).[19] Figure 3 plots the predicted probability that a State A with CINC capabilities of 0.1 experiences a MID based on the second regression model in Table 2. Distance increases in the x axis, normalized by percentages of directed dyadic relationships. All other values are held at their medians. As Figure 3 illustrates, the predominant effect is the loss-of-strength gradient. As the 95% confidence interval around the predicted probabilities line reveals, this relationship is statistically significant across the full range of values of distance.

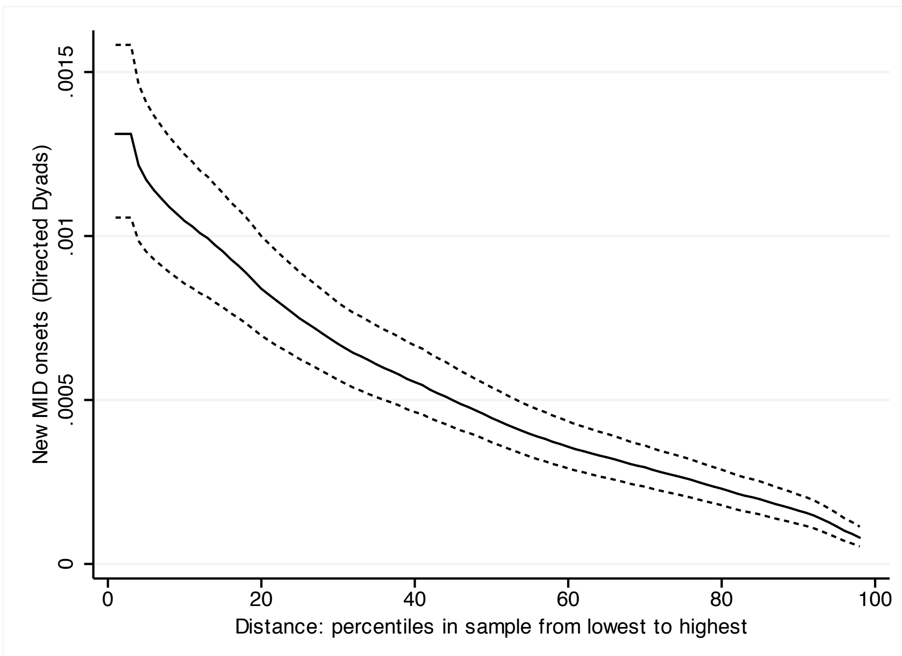

Figure 3: Impact of Proximity on War, CINC = 0.1 (Probit Estimates, Model 2, Table 2)

Figure 4 uses an identical setup to Figure 3, with the exception that State A's CINC score is now assumed to be 0.2. As the Figure reveals, the effect of the loss-of-strength gradient is now roughly equally balanced by the increase-in-uncertainty gradient. Powerful states weaken with distance, but they remain strong enough to fight where they wish. Uncertainty about what a capable country is willing to do just almost exactly cancels out the effect of the loss-of-strength gradient. The confidence intervals are also large, reflecting uncertainty in the estimation of the relationship.

[19] CLARIFY creates probability distributions around point estimates from regression coefficients by resampling. Alex Weisiger generously shared a STATA "do" file automating the process of calculating and plotting these values.

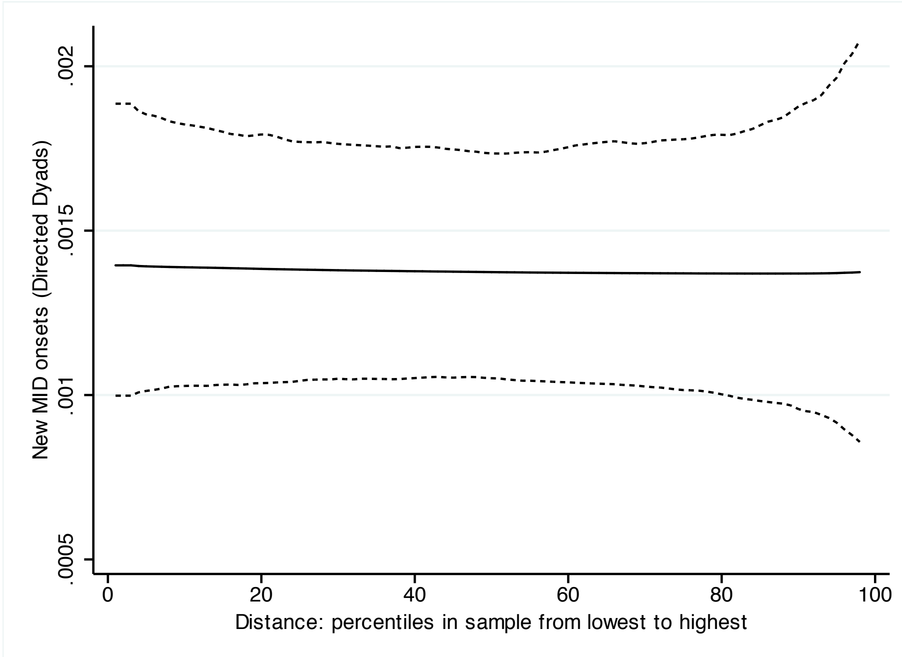

Figure 4: Impact of Proximity on War, CINC = 0.2 (Probit Estimates, Model 2, Table 2)

In Figure 5, State A's capabilities are again increased, this time to a CINC score of 0.3. Here, the effect of proximity has reversed itself, leading to more directed dyadic MIDs with distance. While the most capable countries are still affected by the loss-of-strength gradient, the increase-in-uncertainty gradient is now a more important determinant of conflict. As the confidence interval again reveals, this relationship is statistically significant at the 95% level across the entire range of values for the distance variable. The key informational hypothesis appears to be substantiated.[20]

The direct effect of material power can be assessed independent of distance by holding distance constant, and varying State A's capabilities.[21] As Figure 6 reveals, changes in State A's power generally have no effect on whether A and B fight. For most values, the plot of the effect of A's capabilities on the probability of a MID is flat. Where the estimated relationship curves upward steeply at high levels of CINC_A, the large confidence intervals require that this relationship be treated with skepticism. Power does not appear to directly affect the probability that states fight.

The third and fourth columns of estimated coefficients and standard errors in Table 2 examine

[20]Interacting the monadic capability variables or both monadic CINC scores and distance yields similar results.

[21]Distance is set to zero, since other values allow the indirect effect of capabilities through the interaction terms.

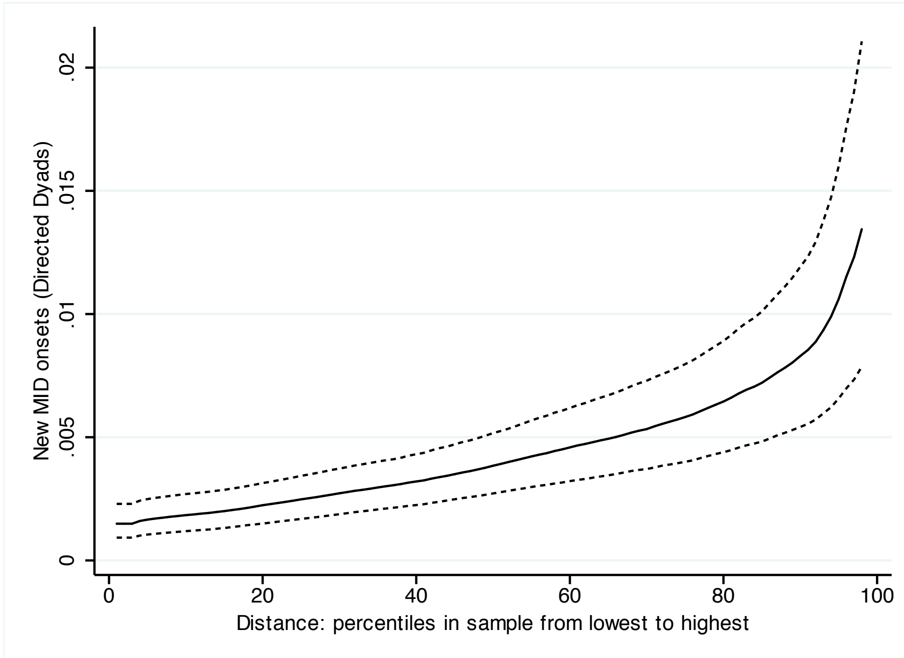

Figure 5: Impact of Proximity on War, CINC = 0.3 (Probit Estimates, Model 2, Table 2)

dispute initiation involving fatal MIDs, while the final paired columns predict MID war initiation. I vary the model specifications, but the results for the key variables (capabilities, distance, and the interaction terms) are the same for all of the models.[22] Introducing a simple representation of the interaction between distance and power causes the effect of power relations on conflict to disappear.

Several interesting relationships emerge from the other independent variables. First, in most cases major power status is a significant determinant of dispute initiation, though not for targets of MID wars.[23] This finding may reflect Snyder's (1965) stability-instability paradox.[24] Opponents are modestly deterred from initiating full-scale contests against major powers. Instead, there is an increase in smaller-scale conflict, perhaps involving brinkmanship (chicken). Indeed, pairs of major powers are less likely to experience MIDs, though the relationship is not statistically significant. This brings into question the traditional focus on major powers, since relations among major powers

[22] In examining many combinations of models I found that the interaction terms are always statistically significant. One or both of the monadic CINC scores can sometimes become statistically significant in certain model specifications, typically when the sample of disputes is small (i.e. MID war initiations), and when I fail to include control variables.

[23] Subjective coding of major power status reflects capabilities and active involvement in the international system.

[24] For a recent study documenting the stability-instability paradox in nuclear weapons, see Rauchhaus (2009).

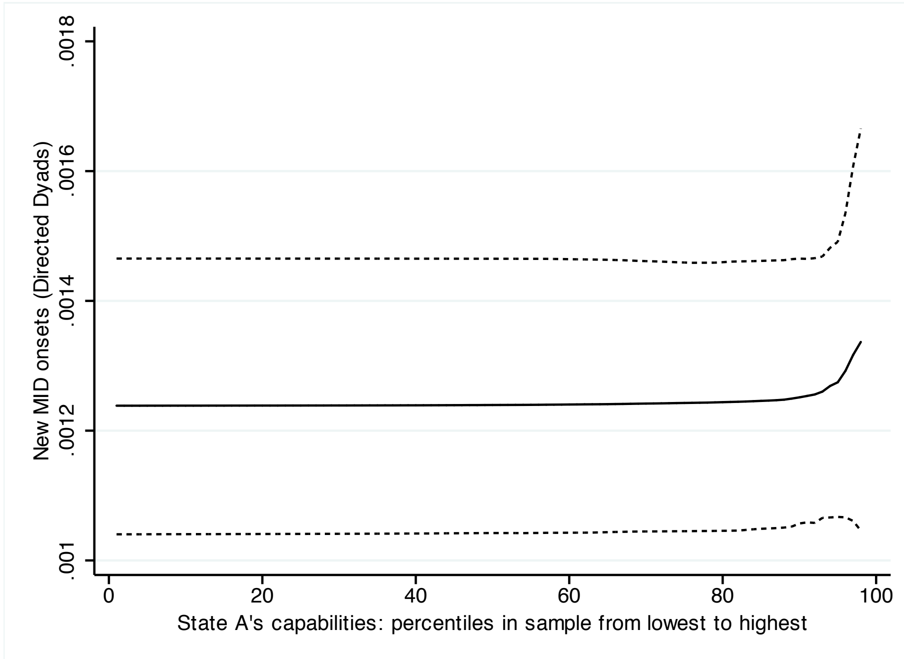

Figure 6: Impact of Power on War, Contiguous States (Probit Estimates, Model 2, Table 2)

appear no more dispute prone, while most of the impact of major power status occurs in relation to non-major powers. Finally, the effects of regime type appear to vary with conflict intensity. The democratic peace is best reflected in the MID wars sample. This relationship is more ambiguous as the intensity of conflict declines. Democracy predicts *increases* in disputes in the all-MIDs sample.

The proximity of sovereign powers seems to be more important in conditioning the impact of capabilities than is power itself. Still, countries could fight in places distant or distinct from the homeland, and the most powerful nations are the most likely to relocate their contests. Since disputes can occur far from any participant, a more precise test of the claim that power conditions distance can be had by looking at the location of disputes. Locating where MIDs happen, as opposed to identifying the countries that fight one another, is a time-consuming and complex task. Fortunately, a new dataset does precisely this (Braithwaite 2010). Additional work by Braithwaite and this author produced a dataset of distances from the latitude and longitude of every MID to the location of the capital cities of each dispute participant. Since these data select on the dependent variable (how does one assign a location to a non-dispute?), it is not possible to evaluate the MID location data in the same manner as when studying dispute onset or initiation. I adopt two approaches to assess the impact of capabilities and other variables on dispute location. First, I examine the determinants of location in the sample of disputes. Next, using two-stage regression, I first estimate the probability of a MID, and then model the location of any resulting conflict.

Table 3 provides four regressions in which capabilities, dyadic distance and other variables predict the distance from the capital of the initiating country to the location of the militarized dispute. Ordinary Least Squares (OLS) is used, since the dependent variable is metric and continuous. The first regression is "monadic" in the sense that only the CINC score of the initiating state and monadic control variables are included (in a sample of all disputes). The more capable the country starting a contest, the more distant is the dispute from the capital of the initiating nation. Having more neighbors tends to cause a country to fight closer to home, while increasing the sample of countries in the world leads contests to become more distant from the initiator's capital. This latter finding reflects decolonization. The same disputes occurring during colonial times were not "international" according to COW coding rules. The number of countries variable helps to ensure that the analysis is not driven by evolving national boundaries. The number of great powers appears to decrease the distance to disputes, but as we shall see, the result is really an artifact of time.

The second regression in Table 3 introduces "dyadic" variables, though the model is again minimalist to show that relationships are not contingent on model specification (Ray 2005; Clarke 2005). While the capabilities of the initiator continues to significantly increase the distance between the initiator's capital and the location of the dispute, the CINC score of the target does the opposite. Capable targets tend to force initiators to fight closer to home, or not to fight at all. This finding reverses the nominal relationship of target capabilities observed in the dispute regressions. Capable targets are constraining *where* initiators fight, but have no effect on *whether* they fight. This is not a balance of power, but rather a balance of location. The interaction between capabilities is not statistically significant. The location of contests is determined by, in effect, a tug-o-war between the absolute capabilities of the respective disputants, *not* by the relative power of the two nations.

I add a conventional dyadic distance variable in the second regression. The distance between disputants shows that the relationship between capabilities and distance-to-dispute is not just

Table 3: Estimating the Effects of Capabilities and Other Variables on Where Disputes Actually Occur (OLS, Dispute Dyads)

	"Monadic"		**"Dyadic"**		**Distance to Initiator**		**Distance to Target**	
Variable	Coeff	(S.E.)	Coeff	(S.E.)	Coeff	(S.E.)	Coeff	(S.E.)
$CINC_A$	24921.559***	(2465.076)	14774.126***	(1614.377)	12625.147***	(1725.410)	-7724.105***	(1677.523)
$CINC_B$			-8468.599***	(1796.777)	-7610.078***	(1670.021)	12972.698***	(1810.280)
$CINC_A \times CINC_B$			33957.071	(21090.838)	27219.426	(17312.907)	26965.457	(17673.494)
Distance			0.725***	(0.056)	0.741***	(0.048)	0.731*	(0.049)
Energy/Pop.$_A$					26.389	(21.409)	-58.941*	(19.911)
Energy/Pop.$_B$					-60.108**	(19.809)	27.542	(21.686)
$E/P_A \times E/P_B$					186.237†	(78.802)	179.566†	(82.111)
$Population_A$					-0.001	(0.001)	0.002*	(0.001)
$Population_B$					0.002**	(0.001)	-0.001	(0.001)
$Democracy_A$					97.402***	(22.814)	-76.120*	(25.081)
$Democracy_B$					-79.183**	(25.202)	97.167*	(22.563)
Dem.$_A \times$ Dem.$_B$					-1.000	(3.678)	-1.202	(3.734)
# $Neighbors_A$	-115.054***	(25.791)	-48.169†	(20.160)	-1.232	(17.459)	-21.186	(17.940)
# $Neighbors_B$			47.740†	(19.079)	-14.126	(16.975)	4.152	(18.783)
# Great Powers	-100.880†	(43.649)			-16.959	(41.974)	-17.906	(40.790)
System Con.			-2772.117	(2051.542)	-3626.841	(2278.698)	-3590.522	(2277.471)
# Countries	5.972***	(1.759)	-1.007	(2.152)	-3.566	(2.248)	-3.481	(2.243)
Intercept	1771.106***	(342.853)	1620.980	(848.196)	2175.385†	(1031.033)	2167.781†	(1032.463)
N	5837		5837		5627		5627	
R^2	0.244		0.432		0.51		0.505	
$F_{(4,1426;8,1426;17,1336;17,1336)}$	32.94		59.98		43.741		39.765	

Significance levels : † : 5% ∗ : 1% ∗∗ : 0.5% ∗ ∗ ∗ : 0.1%

a by-product of correlation between power and proximity. Powerful states could cluster closer together (Gleditsch 2003). Alternately, powerful states could cause neighbors to become weaker, endogenously generating a correlation between capabilities and distance. Whatever the relationship, it does not appear to confound the current analysis. The distance between capital and conflict increases with the distance between states, but the effect of power on distance remains statistically significant. The respective effects of the *# Neighbors* variables are also informative. While having more neighbors forces an initiator to stay closer to home in fighting a given opponent, it does the opposite for a target. Neighbors make a target more vulnerable to contagion effects or side-disputes, allowing the initiator to be bolder in incurring on the target's territory or sphere of influence. While not significant, I replace the *# of Great Powers* variable with the COW *System Con.* variable, which measures the concentration of global capabilities within the group of powerful nations.

The third regression in Table 3 introduces additional variables to address the effects of heterogeneity in development, population and regime type. Tremendous changes in the last century risk generating a spurious correlation between power and proximity. Economic development has increased exponentially. Advances in technology diminish the impact of distance, even as they alter national priorities (Buhaug and Gleditsch 2006). The average population of a country has more than tripled in the sample, from roughly 10 million before 1850, to more than 32 million today. Research also emphasizes differences in democratic foreign policy (Doyle 1986; Owen 1997; Russett and Oneal 2001). While these variables do have an impact on the location of contests, they do not appear to alter the impact of power on location in a fundamental way. Capable initiators still fight farther from home, while powerful targets force fighting to occur closer to the initiator's capital.

Energy consumption per capita correlates closely with economic development, but allows the analysis to extend well into the 19th century. Intensive energy consumption does not appear to affect the location of contests for initiators, but initiators are likely to fight closer to home when the target is a developed state. Development slightly increases the distance from the initiator's capital to disputes. The population size of initiating countries does not much matter for the location of contests, but populous targets tend to encourage the initiator to fight a bit farther from home. Perhaps because they desire to secure domestic populations from harm, democratic initiators tend to fight at greater distances from the homeland. For similar reasons, democratic targets force initiators to shorten the distance from the initiator's capital to the dispute. Again, this may reflect a "not in my back yard" bias attributable to popular rule. Other variables perform as expected.

The fourth regression in Table 3 uses distance from the target state to the MID as a further test of the effects of power on the proximity of contests. All independent variables are as in the previous regression model. If power is conditioning distance, then we should expect the two monadic capability variables to swap signs and coefficient magnitudes, while most other variables remain unaffected. This is exactly what we observe. The CINC score of the initiator now decreases the distance between a dispute and the target's capital, while a capable target forces the fight to occur farther from its home. The monadic development, population, and regime type variables also change signs, magnitudes and statistical significance levels, indicating that the distance to dispute dependent variable is probably capturing distance and not some other process (such as time).

One potentially important source of concern involves selection. An assessment of the location of contests may lead to biased estimates if the determinants of dispute distance are related to the determinants of disputes. Obviously, many of the variables used in Table 3 to predict location are identical to those used in Tables 1 and 2 to model onset or initiation. Heckman (1978) offers the classic exposition of a solution to this problem in the form of two-stage regression. Estimates of wage disparities between male and female workers are biased downward because women who are likely to suffer most from the disparity in wages are unlikely to enter the workforce. Heckman's two-stage estimator first models the biasing effect of participation in the workforce, and then corrects for this bias in estimating the wage differential. Similarly, in estimating differences in location between weak and capable nations, I first need to correct for any disparity in the propensity of weak and capable countries to experience disputes. If the less capable are less (or more) likely to experience conflict, then this will tend to underestimate (or overestimate) the effect of capabilities on location. Not coincidentally, the dispute onset stage estimation is also a useful test of the hypotheses.

Table 4 lists two two-stage Heckman regressions, in which the first stage (selection equation) estimates the probability of MID onset, and the second stage (outcome equation) predicts the location of disputes. These regressions repeat the format of the third and fourth regressions in

Table 4: Two-Stage Models of Dispute Distance (Heckman, Directed Dyads)

Variable	Coeff	(S.E.)	Coeff	(S.E.)
Equation 1:	**Distance to Initiator**		**Distance to Target**	
$CINC_A$	12638.195 ***	(1729.322)	-7685.915 ***	(1682.046)
$CINC_B$	-7597.539 ***	(1673.353)	13009.664 ***	(1804.921)
$CINC_A \times CINC_B$	27396.796	(17300.387)	27486.538	(17696.652)
Distance	0.740 ***	(0.054)	0.726 ***	(0.055)
Energy/Pop.$_A$	26.249	(21.873)	-59.355**	(20.311)
Energy/Pop.$_B$	-60.249 **	(20.290)	27.128	(22.071)
$E/P_A \times E/P_B$	187.732†	(86.096)	183.956 †	(87.443)
$Population_A$	-0.001	(0.001)	0.002 ***	(0.001)
$Population_B$	0.002 **	(0.001)	-0.001	(0.001)
$Democracy_A$	97.953 ***	(21.951)	-74.500 **	(24.466)
$Democracy_B$	-78.628 **	(24.968)	98.797 ***	(21.577)
Dem.$_A \times$ Dem.$_B$	-1.113	(3.497)	-1.533	(3.496)
# $Neighbors_A$	-1.240	(17.418)	-21.208	(17.894)
# $Neighbors_B$	-14.144	(16.933)	4.098	(18.744)
# Great Powers	-17.176	(42.153)	-18.545	(40.955)
System Con.	-3607.516	(2271.494)	-3533.742	(2268.683)
# Countries	-3.549	(2.224)	-3.430	(2.217)
Intercept	2150.140 †	(1042.964)	2093.615 †	(1039.947)
Equation 2:	MID Onset		MID Onset	
$CINC_A$	0.136	(0.548)	0.125	(0.547)
$CINC_B$	0.168	(0.554)	0.176	(0.548)
$CINC_A \times$ Distance	0.001 ***	(0.000)	0.001 ***	(0.000)
$CINC_B \times$ Distance	0.001 ***	(0.000)	0.001 ***	(0.000)
Distance	0.000 ***	(0.000)	0.000 ***	(0.000)
Contiguity	-0.192 ***	(0.010)	-0.192 ***	(0.010)
Alliance	0.009	(0.035)	0.009	(0.035)
Major $Power_A$	0.411 ***	(0.062)	0.410***	(0.063)
Major $Power_B$	0.408 ***	(0.063)	0.410 ***	(0.062)
$Major_A \times Major_B$	-0.091	(0.095)	-0.091	(0.095)
$Democracy_A$	0.061 ***	(0.006)	0.061 ***	(0.006)
$Democracy_B$	0.061 ***	(0.006)	0.061 ***	(0.006)
Dem.$_A \times$ Dem.$_B$	-0.012 ***	(0.001)	-0.012 ***	(0.001)
Intercept	-0.861 ***	(0.062)	-0.860 ***	(0.062)
athrho	0.004	(0.049)	0.012	(0.048)
lnsigma	7.639 ***	(0.035)	7.644 ***	(0.035)
N	1062585		1062585	
Log-likelihood	-73075.39		-73104.893	
$\chi^2_{(17,17)}$	720.823		642.476	

Significance levels : † : 5% $*$: 1% $**$: 0.5% $***$: 0.1% Splines suppressed.

Table 3, with the first set of coefficients and standard errors predicting the distance from the capital of the initiator to the location of the dispute and the second set of coefficients and standard errors modeling dispute locations relative to the target. As these results make clear, selection bias is not interfering with the results in Table 3. The size and significance levels of coefficients in the outcome equation are essentially unchanged. Nor is Heckman's selection statistic (ρ) significantly different from zero. Equally salient, CINC scores in the selection equation are statistically insignificant; capable nations are not more likely to fight. Instead, distance continues to interact with capabilities in the selection stage. Powerful countries are more likely to fight *if* the dispute occurs far from home, while weak nations are slightly more dispute prone when contests are more proximate.

7 Conclusion: Boulding, Waltz, and Fearon

Three approaches to power and conflict can be personified in the work of Kenneth Waltz, Kenneth Boulding, and James Fearon, respectively. Of these, Boulding offers the most limited view of the scope of power in international politics, a view that is most nearly correct, if also in need of refinement. Power conditions distance. The weak and distant are at peace, if only because they must be. The proximate and powerful can fight, but may or may not need war to achieve what they merit or desire. A problem for Boulding is that the most capable exhibit a "gain of strength gradient," becoming more prone to exercise force the farther an opponent is from the homeland.

Waltz's conception of international politics is the least sustainable in terms of the findings here and because of contradictions in the theory between capabilities, preferences, and agency. The most important events in international politics may indeed be explained by differences in the capabilities of nations, but justifying this claim requires a re-definition of what is important to practitioners, rather than to academics. Nations in competition seek the redistribution of benefits and prerogatives. Power relations fundamentally affect the division of the resource pie. Though we lack the ability to map the preferences of nations and to plot the progress of international horse trading, power certainly determines what nations acquiesce to and what they will dispute. Yet, the boundaries on spheres of influence are moving much more than the nominal probability of fighting. The powerful are not challenged close to home. Disputes begin when, and more importantly where, influence is uncertain or control disputed. To paraphrase Mearsheimer, the locations of contests are mainly a function of the balance of power, though the causes of war and peace lie elsewhere.

Fearon embraces agency, offering a theory of international politics that invites us to explore diplomacy much more directly, though he too ignores geography. Uncertainty is necessary but not sufficient. A clash of intentions must accompany the capacity to act. Boulding's insight is that weakness is relative, not so much to power, as to proximity. Distance is something that nations cannot dispel through diplomacy. Nations that are both enemies and neighbors would be better off if they could agree to separate, like a divorced couple with a restraining order. Unfortunately, space on earth is limited, with most locations already under different management. Making conflict more costly by increasing the distance between countries is not practical. Instead, nations seek to impose weakness through other means, like arms control treaties or third-party guarantees. However, these have structural flaws, since it is difficult to contract to impair both parties equally. The weakness of distance has the advantage of being symmetric, equally impairing both sides in a potential dispute.

If Boulding helps by imparting geographical context to Fearon's bargaining space, improving the empirical fit, Fearon resolves an empirical anomaly for Boulding by explaining why the powerful appear to gain strength with distance. Though Boulding understood that distance degrades capabilities, he still assumed that capabilities cause conflicts. If, as Fearon suggests, war is more a product of error than power, then the increase in distant disputes among the powerful is really a reflection of uncertainty. There is no more reliable prediction in international politics than that Brunei and Burundi will not become belligerents. This certainty that the mutual loss-of-strength exceeds the ability of either nation to fight makes it easy for both observers and participants to discount the probability of a contest. In contrast, nations capable of projecting power expose the physical possibility of conflict. Uncertainty about whether the powerful will resort to force increases the risk of violence because its possibility can be underestimated. Capabilities make for more possibilities and thus greater uncertainty and more war. The apparent effect of powerful nations "climbing the slope" of the loss-of-strength gradient in reverse reflects growing uncertainty with distance about what the powerful are willing to do, given that they are able to do many things.

Appendix A: Endogenizing the Effect of Distance on War Costs

One of the weaknesses of the model (and indeed most other formal models of conflict) is the implausible assumption that war costs are uncorrelated with other parameters, such as the probability of victory, or an actor's resolve. Actors are bound to be more willing or able to incur costs if they are rich/powerful, or if they have a high value for the stakes. It is conceivable that endogenizing war costs could lead to different predictions. However, $H1$-3 still hold, as I briefly demonstrate below.

Begin with Eqs 1-3. In addition, let us imagine that i's war costs originate from some function:

$$c_i = g_i + \rho_i (1 - p_0) + \gamma * k^{\phi} \tag{A1}$$

where g is some non-negative constant such as "fighting spirit," $(1 - p_0)$ is the probability that j wins if i is contiguous, k is the distance variable, and ρ, γ and ϕ are all non-negative parameters.

By analogy, j's war costs, where the loss-of-strength for the target is zero, are as follows:

$$c_j = g_j + \rho_j p_0 \tag{A2}$$

Substituting Eqs 1, A1, and A2 into Eq 2 and 3, and solving the model as outlined in the text yields relationships for $Prob\,(war)$ and $\bar{p}_0$ equivalent to those generated previously. In fact, because c_i is now increasing in k, the effects of distance in decreasing conflicts involving weak attackers (i.e. loss-of-strength) and increasing corner solutions for the strong (increase-in-uncertainty) is enhanced. As Figure A1 illustrates, endogenizing war costs leads to relationships that are somewhat "steeper" than in Figure 1 in the text, but the overall comparative statics remain substantively unchanged.

Appendix B: Varying the Effect of the Loss-of-Strength with Power

The impact of the loss-of-strength gradient (LSG) might vary with capabilities. Stronger states could experience less (or more) than proportional effects of the LSG. Eq 1 is generalized as follows:

$$p = \frac{p_0}{1 + \alpha \left(\theta k^{\beta} + (1 - \theta)\, k^{\beta} (1 - p_0) \right)} \tag{A3}$$

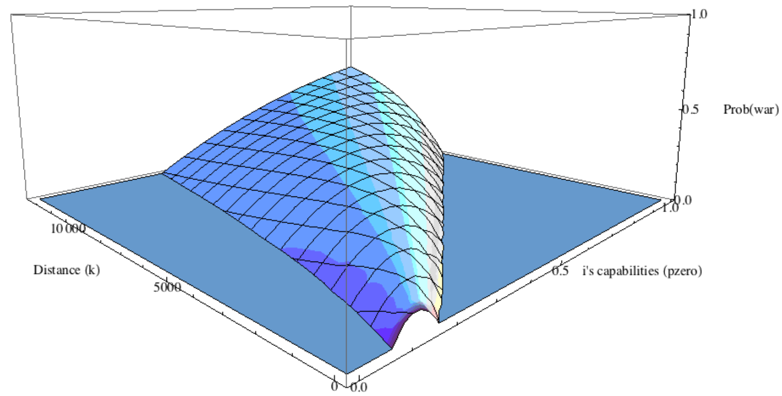

Figure A1: Relationship between Power, Proximity, and Conflict with Endogenous Costs

where θ, $(1 \geq \theta \geq 0)$ is an exogenous parameter weighting and other parameters are as before.

Where $\theta = 1$, Eq A3 is just Eq 1. In contrast, if $\theta = 0$, then $(1 - p_0)$ in the denominator means that the discounting effect of distance (k) is inversely proportional to i's capabilities. If i will win with certainty against a contiguous enemy $(p_0 = 1)$, then the denominator is just 1 and $p = p_0$. If instead p_0 is very small, then the discounting effect of distance is largely undiminished. By varying θ, one can generate any discounting of the LSG for the effects of power that is desired.

As one might expect, if $\theta = 1$, then all aspects of the game and solution are identical to the game in the text. For $\theta < 1$, because the LSG varies with p_0, changes to optimal strategies, equilibria, $\bar{p}_0$ and $Prob\,(war)$ are also proportional to p_0. Weak challengers behave much the same regardless of the value of θ. In contrast, capable challengers are less affected by the LSG as θ becomes smaller. In the extreme, where $\theta = 0$, capable countries experience corner solutions at distance exactly as they do with contiguous opponents (an explicit solution is available from the author).

For weak potential initiators, Figure 1 and Figure A2 are basically identical. Differences arrive with increasing power. For the most capable, the probability of conflict is uniform at all distances, since k does diminish p, allowing for interior solutions and a role for uncertainty in bargaining.

Varying the LSG with power thus diminishes differences between capable and weak potential initiators, and reduces the unique contribution of bargaining. To the degree that the LSG varies with capabilities, one should not expect capable states to be more likely to fight distant adversaries. Given the results reported here, the LSG probably varies less with capabilities than some imagine.

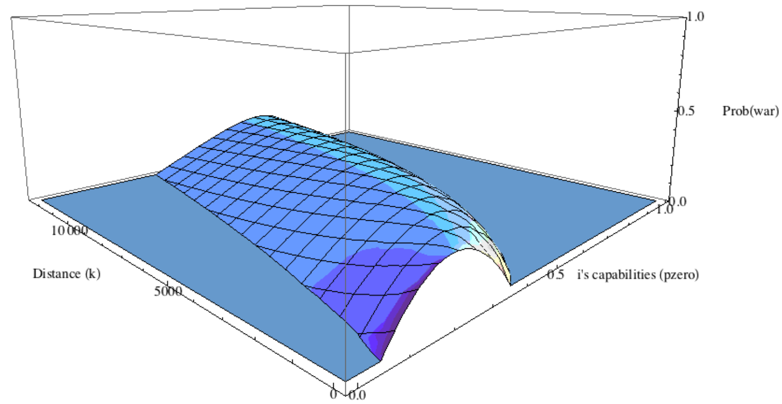

Figure A2: Relationship between Power, Proximity, and Conflict with Endogenous Costs

Appendix C: Alternatives to the Use of Corner Solutions

There are at least two other ways to generate an increase in conflict correlated with distance for powerful states (but not for the weak). For brevity, I offer only a sketch of the arguments here.

First, since capable countries can project power farther than weak states, the number of countries with which they can interact is naturally much larger. Yet, if countries still face opportunity costs in the exercise of military violence, then force used against one state cannot be exercised simultaneously against other nations. Capable countries must choose more selectively than weak states from a larger number of potential targets. At the same time, all countries desire to obtain preferred outcomes. This means that capable states have more incentives to bluff when dealing with the larger number of distant states. Distant adversaries must rationally infer that the probability of attack is lower with distance, and thus they are more likely to (incorrectly) reject i's demands.

Second, interest may decline in distance. Even with no LSG, powerful states are less likely to generate corner solutions if distance reduces resolve. The effect is then much the same as the model in the text. Capable countries generate corner solutions with neighbors, while interior solutions are produced in interactions with distant states. Weak countries, that must search for interior solutions even with neighbors, find that the loss of value for distant issues and territory leads to the opposite corner solution, where the weak state prefers conceding everything rather than risk fighting.

References

Achen, Christopher H. 2005. "Let's Put Garbage-Can Regressions and Garbage-Can Probits Where They Belong." *Conflict Management and Peace Science* 22(4):327–339.

Axelrod, Robert. 1984. *The Evolution of Cooperation.* New York: Basic Books.

Barnett, Michael and Raymond Duvall. 2005. "Power in International Politics." *International Organization* 59(1):39–75.

Beck, Neal, Jonathan Katz and Richard Tucker. 1998. "Taking Time Seriously: Time-series–Cross-section Analysis with a Binary Dependent Variable." *American Journal of Political Science* 42(4):1260–1288.

Bennett, D. Scott and Allan C. Stam. 2000. "EUGene: A Conceptual Manual." *International Interactions* 26(2):179–204.

Bennett, D. Scott and Allan C. Stam. 2001. "EUGene: Expected Utility and Data Management Program, version 2.250." Computer Program. The Pennsylvania State University and Dartmouth University.

Blainey, Geoffrey. 1973. *The Causes of War.* New York: Free Press.

Boulding, Kenneth. 1962. *Conflict and Defense.* New York: Harper & Row.

Boulding, Kenneth. 1978. *Stable Peace.* Austin, TX: University of Texas Press.

Braithwaite, Alex. 2009. "Codebook for the Militarized Interstate Dispute Location (MIDLOC) Data, v 1.0." University College London.

Braithwaite, Alex. 2010. "MIDLOC: Introducing the Militarized Interstate Dispute Location Dataset." *Journal of Peace Research* 47(1):91–98.

Braumoeller, Bear. 2004. "Hypothesis Testing and Multiplicative Interaction Terms." *International Organization* 58(4):807–820.

Brecher, Michael and Jonathan Wilkenfeld. 1997. *A Study in Crisis.* Ann Arbor: University of Michigan.

Bremer, Stuart. 1992. "Dangerous Dyads: Conditions Affecting the Likelihood of Interstate War." *Journal of Conflict Resolution* 36(2):309–341.

Bremer, Stuart. 1993. "Democracy and Militarized Interstate Conflict, 1816–1965." *International Interactions* 18(3):231–249.

Bueno de Mesquita, Bruce. 1981. *The War Trap.* New Haven: Yale University Press.

Bueno de Mesquita, Bruce. 2003. Neorealism's Logic and Evidence: When is a Theory Falsified? In *Realism and the Balancing of Power: A New Debate*, ed. Colin Elman and John Vasquez. Englewood Cliffs, NJ: Prentice Hall pp. 166–197.

Bueno de Mesquita, Bruce and David Lalman. 1988. "Empirical Support for Systemic and Dyadic Explanations of International Conflict." *World Politics* 41(1):1–20.

Bueno de Mesquita, Bruce and David Lalman. 1992. *War and Reason: Domestic and International Imperatives.* New Haven: Yale University Press.

Buhaug, Halvard and Nils Petter Gleditsch. 2006. The Death of Distance?: The Globalization of Armed Conflict. In *Territoriality and Conflict in an Era of Globalization*, ed. Miles Kahler and Barbara Walter. Cambridge: Cambridge University Press.

Clarke, Kevin A. 2001. "Testing Nonnested Models of International Relations: Reevaluating Realism." *American Journal of Political Science* 45(3):724–744.

Clarke, Kevin A. 2005. "The Phantom Menace: Omitted Variable Bias in Econometric Research." *Conflict Management and Peace Science* 22(4):341–352.

Correlates of War Project. 2005. "National Material Capabilities Data Documentation, V. 3.0." Codebook.

Deutsch, Karl W. and J. David Singer. 1964. "Multipolar Power Systems and International Stability." *World Politics* 16:390–406.

Diehl, Paul. 1985. "Contiguity and Military Escalation in Major Power Rivalries, 1816–1980." *Journal of Politics* 47(4):1203–1211.

Dixon, William J. 1994. "Democracy and the Peaceful Settlement of International Conflict." *American Political Science Review* 88(2):14–32.

Downes, Alexander B. and Todd S. Sechser. 2010. "Are You Threatening Me?: A Reassessment of the Credibility of Democratic Threats in International Relations." Paper presented at the Annual Meetings of the American Political Science Association, Washington D.C., September 2-5.

Doyle, Michael. 1986. "Liberalism and World Politics." *American Political Science Review* 80(4):1151–1169.

Fearon, James D. 1994. "Signaling Versus the Balance of Power and Interests: An Empirical Test of the Crisis Bargaining Model." *Journal of Conflict Resolution* 38(2):236–269.

Fearon, James D. 1995. "Rationalist Explanations for War." *International Organization* 49(3):379–414.

Gartzke, Erik and Dominic Rohner. 2009. "To Conquer or Compel: Economic Development and Interstate Conflict." University of California, San Diego and the University of York. Typescript.

Geller, Daniel S. and J. David Singer. 1998. *Nations at War: A Scientific Study of International Conflict.* Cambridge: Cambridge University Press.

Gibler, Douglas and Meredith Reid Sarkees. 2004. "Measuring Alliances: The Correlates of War Formal Interstate Alliance Dataset, 1816–2000." *Journal of Peace Research* 41(2):211–222.

Gilpin, Robert. 1981. *War and Change in World Politics.* New York: Cambridge University Press.

Gleditsch, Kristian S. 2003. *All Politics is Local: The Diffusion of Conflict, Integration, and Democratization.* Ann Arbor, MI: University of Michigan Press.

Gochman, Charles S. and Zeev Maoz. 1984. "Militarized Interstate Disputes, 1816-1976: Procedure, Patterns, and Insights." *Journal of Conflict Resolution* 28(4):585–615.

Heckman, James J. 1978. "Sample Selection Bias as a Specification Error." *Econometrica* 47(1):153–162.

Hegre, Håvard. 2008. "Gravitating Toward War: Preponderance May Pacify, but Power Kills." *Journal of Conflict Resolution* 52(4):566–589.

Huth, Paul K., Christopher Gelpi and D. Scott Bennett. 1993. "The Escalation of Great Power Militarized Disputes: Testing Rational Deterrence Theory and Structural Realism." *American Political Science Review* 87(3):609–623.

Jaggers, Keith and Ted R. Gurr. 1995. "Transitions to Democracy: Tracking Democracy's 'Third Wave' with the Polity III Data." *Journal of Peace Research* 32(4):469–482.

Jones, Daniel, Stuart Bremer and J. David Singer. 1996. "Militarized Interstate Disputes, 1816-1992: Rationale, Coding Rules, and Empirical Patterns." *Conflict Management and Peace Science* 15(2):163–213.

Keohane, Robert O. 1998. "International Institutions: Can Interdependence Work?" *Foreign Policy* 110:82–96.

Keohane, Robert O., ed. 1986. *Neorealism and its Critics.* New York: Columbia University Press.

Lemke, Douglas and William Reed. 2001. "The Relevance of Politically Relevant Dyads." *Journal of Conflict Resolution* 45(1):126–144.

Leng, Russell J. 2002. Quantitative International Politics and Its Critics. In *Millenial Reflections on International Studies*, ed. Michael Brecher and Frank P. Harvey. University of Michigan Press pp. 420–431.

Mackinder, Halford. 1962[1919]. *Democratic Ideals and Reality.* Westport, CT: Greenwood.

Mahan, A.T. 1915. *The Interest of America in International Conditions.* Boston: Little, Brown, and Co.

Mahan, A.T. 1987[1890]. *The Influence of Sea Power on History, 1660–1783.* Fifth ed. New York: Dover.

Maoz, Zeev and Bruce Russett. 1992. "Alliances, Contiguity, Distance, Wealth, and Political Stability: Is the Lack of Conflict Among Democracies a Statistical Artifact?" *International Interactions* 17(3):245–268.

Maoz, Zeev and Bruce Russett. 1993. "Normative and Structural Causes of the Democratic Peace, 1946-1986." *American Political Science Review* 87(3):624–638.

Marshall, Monty and Keith Jaggers. 2002. *Polity IV Project: Political Regime Characteristics and Transitions, 1800-2002.* University of Maryland.

Mearsheimer, John. 1995. "The False Promise of International Institutions." *International Security* 19(3):5–49.

Mearsheimer, John J. 2001. *The Tragedy of Great Power Politics.* New York: W.W. Norton.

Moravcsik, John A. 1997. "Taking Preferences Seriously: A Liberal Theory of International Politics." *International Organization* 51(4):515–553.

Most, Benjamin A. and Harvey Starr. 1990. "Opportunity, Willingness, and the Diffusion of War." *American Political Science Review* 84(1):47–67.

Niou, Emerson S. and Peter Ordeshook. 1986. "A Theory of the Balance of Power." *Journal of Conflict Resolution* 30(4):685–715.

Niou, Emerson S. and Peter Ordeshook. 1994. "Less Filling, Tastes Great: The Realist-Neoliberal Debate." *World Politics* 46(2):209–234.

Niou, Emerson S., Peter Ordeshook and Gregory Rose. 1989. *The Balance of Power: Stability in International Systems.* Cambridge: Cambridge University Press.

Nye, Joseph S. 2004. *Soft Power: The Means to Success in World Politics.* New York: Public Affairs.

Oneal, John R. and Bruce Russett. 1997. "The Classical Liberals Were Right: Democracy, Interdependence, and Conflict, 1950-1985." *International Studies Quarterly* 41(2):267–293.

Oneal, John R. and Bruce Russett. 1999. "The Kantian Peace: The Pacific Benefits of Democracy, Interdependence, and International Organizations." *World Politics* 52(1):1–37.

Oneal, John R., Bruce Russett and Michael L. Berbaum. 2003. "Causes of Peace: Democracy, Interdependence, and International Organizations." *International Studies Quarterly* 47(3):371–393.

Organski, A.F.K. 1958. *World Politics.* New York: Knopf.

Organski, A.F.K. and Jacek Kugler. 1980. *The War Ledger.* Chicago: University of Chicago Press.

Owen, John M. 1997. *Liberal Peace, Liberal War.* Ithaca, NY: Cornell University Press.

Oye, Kenneth A., ed. 1985. *Cooperation Under Anarchy.* Princeton, NJ: Princeton University Press.

Partell, Peter J. and Glenn Palmer. 1999. "Audience Costs and Interstate Crises: An Empirical Assessment of Fearon's Model of Dispute Outcomes." *International Studies Quarterly* 43(2):389–405.

Powell, Robert. 1999. *In the Shadow of Power: States and Strategies in International Politics.* Princeton, NJ: Princeton University Press.

Rauchhaus, Robert W. 2009. “Evaluating the Nuclear Peace Hypothesis: A Quantitative Approach.” *Journal of Conflict Resolution* 53(2):xxx–xxx.

Ray, James Lee. 2005. “Constructing Multivariate Analyses (of Dangerous Dyads).” *Conflict Management and Peace Science* 22(4):277–292.

(Reed), William, David H. Clark, Timothy Nordstrom and Wonjae Hwang. 2008. “War, Power, and Bargaining.” *Journal of Politics* 70(4):1203–1216.

Ruggie, John Gerard. 1998. *Constructing the World Polity: Essays on International Institutionalism.* New York: Routledge.

Russett, Bruce and John R. Oneal. 2001. *Triangulating Peace: Democracy, Interdependence, and International Organizations.* New York: Norton.

Schroeder, Paul. 1994. “Historical Reality Versus Neo-Realist Theory.” *International Security* 19(1):108–148.

Schultz, Kenneth A. 1998. “Domestic Opposition and Signaling in International Crises.” *American Political Science Review* 94(4):829–844.

Schultz, Kenneth A. 2001. “Looking for Audience Costs.” *Journal of Conflict Resolution* 45(1):32–60.

Schweller, Randall. 1998. *Deadly Imbalances: Tripolarity and Hitler’s Strategy of World Conquest.* New York: Columbia University Press.

Senese, Paul. 2005. “Territory, Contiguity, and International Conflict: Assessing a New Joint Explanation.” *American Journal of Political Science* 49(4):769–779.

Singer, J. David. 1963. “Inter-Nation Influence: A Formal Model.” *American Political Science Review* 57(2):420–430.

Singer, J. David. 1987. “Reconstructing the Correlates of War Dataset on Material Capabilities of States, 1816–1985.” *International Interactions* 14:115–132.

Singer, J. David and Melvin Small. 1966. “Formal Alliances, 1815–1939: A Quantitative Description.” *Journal of Peace Research* 3(1):1–32.

Singer, J. David, Stuart Bremer and John Stuckey. 1972. Capability Distribution, Uncertainty, and Major Power War. In *Peace, War, and Numbers.*, ed. Bruce M. Russett. Beverly Hills, CA: Sage pp. 19–48.

Siverson, Randolph M. and Harvey Starr. 1990. “Opportunity, Willingness, and the Diffusion of War.” *American Political Science Review* 84(1):47–67.

Slantchev, Branislav. 2005. “Military Coercion in Interstate Crises.” *American Political Science Review* 99(4):533–547.

Small, Melvin and J. David Singer. 1990. Formal Alliances, 1816–1965: An Extention of the Basic Data. In *Measuring the Correlates of War.* University of Michigan Press.

Snyder, Glenn H. 1965. The Balance of Power and the Balance of Terror. In *The Balance of Power*, ed. Paul Seabury. San Francisco: Chandler.

Spykman, Nicholas J. 1942. *America’s Strategy in World Politics: The United States and the Balance of Power.* New York: Harcourt, Brace & Co.

Spykman, Nicholas J. 1944. *The Geography of the Peace.* New York: Harcourt, Brace & Co.

Stam, Allan and Dan Reiter. 1998. “Democracy, War Initiation, and Victory.” *American Political Science Review* 92(2):377–389.

Sullivan, Michael P. 1990. *Power in Contemporary Iinternational Politics.* Columbia, SC: South Carolina.

Tomz, Michael, Jason Wittenberg and Gary King. 2003. "CLARIFY: Software for Interpreting and Presenting Statistical Results, v. 2.1." Computer Program. Harvard University.

Waltz, Kenneth N. 1979. *Theory of International Politics.* New York: McGraw-Hill.

Waltz, Kenneth N. 2000. "Globalization and American Power." *National Interest* 59:46–56.

Wayman, Frank W., J. David Singer and Gary Goertz. 1983. "Capabilities, Allocations, and Success in Militarized Disputes and Wars, 1816–1976." *International Studies Quarterly* 27(4):497–515.

Wendt, Alexander. 1999. *Social Theory of International Politics.* Cambridge: Cambridge University Press.