

# Goliath's Curse

Asymmetric Power and the Effectiveness of Coercive Threats\*

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## Abstract

States typically issue compellent threats against considerably weaker adversaries, yet their threats often fail. Why? Expanding on a standard model of international crisis bargaining, I argue that a theory of reputation-building can help shed light on this puzzle. The model casts reputation as a strategic problem, showing that challengers issuing compellent threats have incentives to anticipate the *reputation costs* that target states incur when appeasing aggressors. If challengers can recognize these costs and offset them with side payments or reduced demands, then even reputation-conscious targets will acquiesce. I argue, however, that powerful challengers are more likely to underestimate their targets' reputation costs and insufficiently compensate them. In this way, military strength contributes to information problems that undermine the effectiveness of compellent threats. The logic is illustrated by the 1939 Russo-Finnish crisis, and the argument's implications for the study of coercive diplomacy are explored.

## The Puzzle: Asymmetric Compellence Failure

A longstanding principle of international relations theory is that coercive threats are more effective, on average, when they come from powerful states. Indeed, it seems intuitive that strong powers would make more potent threats since they can threaten especially severe punishment for noncompliance.<sup>1</sup> But the historical record shows that the failure of asymmetric compellent threats has been a persistent feature of international crises across both geography and time.<sup>2</sup> As far back as the Peloponnesian War, for example, Thucydides told of imperial Athens' failure to intimidate the tiny island of Melos into joining its circle of allies. In the mid-nineteenth century, Turkey's rejection of a Russian ultimatum led to the Crimean War; a decade later, the Seven Weeks' War erupted in part because Prussia's mighty army could not coerce weaker neighbors such as Saxony, Hanover, and Electoral Hesse into joining Bismarck's confederation without a fight. Explicit threats likewise failed to secure safe passage for the German army through Belgium and Luxembourg at the outset of World War I. Italy failed on multiple occasions during the 1930s to compel an isolated Albania to do its bidding; during the same period, imperial Japan met resistance to its threats from a weak and internally-riven China. In 1982, Argentina's military junta refused to roll back its occupation of the Falkland Islands in the face of an explicit British ultimatum. And throughout the 1980s, South African threats failed to compel Botswana, Zambia, and Zimbabwe to crack down on guerilla incursions launched from their territory. In all of these cases, the balance of military power was stacked heavily in favor of the aggressors. Why did their compellent threats fail?

Asymmetric compellence failures likewise resonate strongly in American foreign policy. Since the end of World War II, the United States has targeted mostly weaker

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<sup>1</sup>Cable (1994, 23) provides the typical logic: "From the standpoint of the victim, the greater the force available to the opponent, the stronger become the arguments for his own acquiescence." Arguing along similar lines are Organski 1958, Snyder and Diesing 1977, Mearsheimer 1983, and Huth 1988, among many others.

<sup>2</sup>As defined by Schelling (1960), a compellent threat is the inverse of a deterrent threat, aiming to change the status quo rather than preserve it.

adversaries with its threats, but usually those threats have not worked.<sup>3</sup> In the past two decades, for example, Panama, Iraq, Serbia, and Afghanistan all defied American threats despite being comparatively weak. Indeed, the costly occupation currently underway in Iraq was preceded by a failed ultimatum against Saddam Hussein. Why has American primacy apparently not translated into greater coercive leverage against small adversaries?

These compellence failures are puzzling because they seem to violate the traditional notion that threats are more likely to work when the state issuing them holds a large military advantage. But I argue below that these cases are probably not the anomalies they appear to be. Building on a standard model of interstate crisis bargaining, I argue that a challenger's own power interferes with its ability to evaluate an opponent's resolve and propose a mutually-acceptable revision of the status quo. In short, a challenger's military power exacerbates information problems that make its threats less likely to succeed.

The analysis rests in large part on a logic of reputation-building. When a target capitulates to a compellent threat, it reveals information about the limits of its resolve. Since the challenger might exploit this information to make new demands in the future, complying with a threat thus entails *reputation costs* for the target – costs that grow more severe as future threats from the challenger become more likely. Even if the target might otherwise prefer to acquiesce to a threat, reputation costs can motivate it to fight unless the challenger offsets these costs by demanding less or paying compensation. A successful compellent threat thus requires the challenger and target to agree about the likelihood of future crises so the two can settle on a “fair price” for the target's reputation. If the challenger underestimates the target's reputation costs, however, it will offer too little compensation and the threat will fail.

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<sup>3</sup>Blechman and Kaplan (1978) report that U.S. compellence attempts succeeded over the long term just 19% of the time (in 37 total attempts) between 1946 and 1975. George and Simons (1994) and Art and Cronin (2003) are somewhat more optimistic, concluding from a combined set of 22 case studies that U.S. coercive diplomacy campaigns succeed roughly 30% of the time. The latter pair of studies, however, do not attempt to match Blechman and Kaplan's effort to evaluate all episodes within a given time period.

A challenger's military power increases the risk of such miscalculations by making it more difficult for adversaries to settle on a common estimate of the target's reputation costs. The reason is that as a challenger's ability to project military power grows, its private intentions play an increasingly important role in shaping the target's expectations about the future. Since these intentions are known only to the challenger, however, the two sides may reach very different conclusions about the likelihood that the target will face future demands. Realizing that the target has incentives to exaggerate its fears of the future in order to get a better deal today, the challenger may insufficiently compensate the target's perceived reputation costs, causing the threat to fail. In contrast, when a challenger lacks the material capacity to project power – whether due to physical weakness or geographic distance – both sides can easily agree about the sheer physical improbability of future threats from the challenger, even if they disagree about its desire to make them. This fact facilitates mutual agreement about the target's (low) reputation costs and increases the chances of a properly-calibrated threat. In this way, power can impede challengers' efforts to buy off the reputational interests of their targets, making compelling threats less likely to work. Even when a challenger's threats are completely credible, the balance of capabilities is publicly known, and settlements are enforceable, fears about a challenger's future intentions can motivate rational targets to fight losing wars in order to deter future aggression.

This argument contains two important implications for the study of reputations in international crisis bargaining. First, it offers a more complete rationalist theory of reputations in military crises by specifying why challengers may be unable to buy off reputation-minded opponents. Although it is often suggested that actors might stand firm in crises to deter future challenges, this cannot fully explain unsuccessful threats. The reason is that even if one player has incentives to induce an inefficient outcome (i.e., war) in order to look tough, the other player should have equally strong incentives to prevent that outcome by making smaller demands or by offering larger

side payments. In other words, reputations are not only worth building; they are also worth accommodating. For instance, Barbara F. Walter has recently argued that a government might opt for war against a secessionist group in order to discourage other rebel groups from trying to secede.<sup>4</sup> But in this scenario a costly civil war is suboptimal for the first secessionist group. Why couldn't it have offered some additional side payment to counterbalance the government's incentive to build a reputation through war? Reputation-building incentives alone cannot explain bargaining failures – we must also explain why an actor issuing a demand cannot simply recognize its adversary's reputation problem ahead of time and propose a more attractive deal to ameliorate it. Scholarly treatments of reputation-building in international crises often overlook this problem, or simply assume it away.<sup>5</sup> But the model below addresses this issue by allowing challengers to strategically adjust their demands in response to reputational dynamics.

Along similar lines, this article aims to correct an important shortcoming in the common “balance of interests” explanation for compellence failure, which asserts that threats often fail because the stakes in asymmetric disputes are often simply more important to the weaker side.<sup>6</sup> Even if true, this is not a complete explanation for compellence failure because it does not explain why stronger challengers cannot recognize these imbalances beforehand and attenuate their demands accordingly. This theoretical gap is especially problematic because most bargaining models of war imply

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<sup>4</sup>Walter 2006.

<sup>5</sup>Many formal models of reputation-building, for instance, duck the question by prohibiting the challenger from making side payments or adjusting its demands. Examples from international relations include Alt et al. 1988; Wagner 1992; and Tingley and Walter 2007. Such models are usually extensions of Selten's (1978) classic model of market-entry deterrence. In most variations of the model, potential market entrants know that the monopolist has incentives to build a reputation by launching a mutually-harmful price war, but the construct of the model prevents them from paying off the monopolist to avert this inefficient outcome. See, for instance, Kreps and Wilson 1982 and Milgrom and Roberts 1982. Nalebuff (1991) describes a different type of model demonstrating that states may have incentives to protect their reputations by behaving aggressively, but his model likewise contains no bargaining (indeed, it consists of only one player), thereby artificially excluding the possibility that an adversary might adapt its strategy in response to these dynamics.

<sup>6</sup>See, for example, Mack 1975; Posen 1996.

that challengers have strong incentives to anticipate (and accommodate) imbalances of interest in order to avoid the inefficiencies of conflict.<sup>7</sup> The argument presented below provides the missing logic by explaining why powerful challengers may be more likely to make “mistakes” when devising their compelling threats, despite having incentives to avoid such errors.

Second, this article offers a revised interpretation of what it might mean to have a reputation for resolve (or “toughness”) in crises. Recent debates about reputation in international security studies tend to think of resolve as a state’s basic inclination to defend its commitments. The central question driving much of this research thus asks whether states can become known for being the type that generally stands firm in crises.<sup>8</sup> Scholars such as Daryl G. Press argue that the answer is no: leaders predict their adversaries’ behavior by considering immediate costs and benefits, not by weighing broad judgments about their character. Since no two crises are alike, he argues, reputations for resolve have no bearing on crisis outcomes.<sup>9</sup> The discussion below, however, suggests that it might be productive to think of reputations for resolve in a different way. Although military crises are often about different issues, they all share one crucial similarity: military conflict is always a possible outcome. It is reasonable, then, to expect that beliefs about others’ sensitivity to the costs of war should carry over from crisis to crisis, irrespective of the nature of the dispute.<sup>10</sup> In other words, fighting may be useful for communicating cost-tolerance, even if it does not communicate a general penchant for credibility or honesty. In this way, the model suggests that all military crises are at least partially interdependent, even when the issues triggering them are not the same. Empirical research showing that

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<sup>7</sup>For example, Fearon 1995.

<sup>8</sup>See, for instance, Mercer 1996; Danilovic 2002; Press 2005; and Sartori 2005; as well as older works in the deterrence literature such as Ellsberg 1968. Snyder and Diesing (1977, 187) call the idea of innate firmness “pure resolve,” whereas Schelling (1966, 124) refers to having “a reputation for action.” See the excellent reviews of this literature by Mercer (1996, chapter 1) and Huth (1997).

<sup>9</sup>Press 2005.

<sup>10</sup>This is also how Nalebuff (1991) characterizes resolve.

reputations for keeping (or breaking) verbal commitments appear not to matter in military crises therefore should not lead us to infer that reputations in general are irrelevant in international disputes.

The remainder of this article proceeds as follows. First, I locate in the literature on international conflict three potential explanations for asymmetric compellence failure and find them poorly suited to this puzzle. Second, I describe a strategic model of crisis bargaining and explain why it is useful for investigating the effectiveness of compellent threats. Third, I characterize the model's equilibria and explore its basic logic. The fourth section evaluates the causes of compellence failure in the model and explains why it is more likely when challengers are powerful. Section five illustrates the model's mechanisms with the example of the 1939 Russo-Finnish crisis, in which Soviet compellent threats failed to persuade Finland to make fairly minimal territorial concessions. Implications and conclusions follow.

## Possible Explanations

Why do compellent threats from extremely powerful states often fail? Ready answers can be found in the theoretical literature on the causes of war. Here I consider three plausible accounts and argue that while they surely help to explain many international crises, they are not very useful for understanding the narrower class of compellence failures in which the challenger has a lopsided military advantage.

First, "false optimism" might explain the failure of asymmetric compellent threats: if a crisis participant cannot effectively communicate its military strength, its adversary might reject a peaceful resolution in the mistaken belief that its power entitled it to a better deal.<sup>11</sup> In crises where the challenger is overwhelmingly powerful, however, this explanation is unconvincing, since miscalculations about relative power are probably least likely when the balance of power is heavily tilted toward one side. Uncertainty about relative capabilities is commonplace among military peers, whose

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<sup>11</sup>Blainey 1973; Fearon 1995; Van Evera 1999.

strength vis-à-vis each other depends on training, tactics, and other factors that both sides cannot observe. But as Wagner has argued, intangible factors become less decisive when the observable balance of forces is lopsided, increasing the likelihood that the two sides will agree about the probable outcome of a fight.<sup>12</sup> In 1914, for example, the enormous material disparity between the German and Belgian armies helped military planners on both sides to reach virtually identical judgments about the balance of power. Belgium's decision to refuse Germany's demands was taken not in a fit of exuberance, but rather with the reluctant acknowledgment that defeat would be inevitable despite the nation's external security guarantees.<sup>13</sup>

Second, a compelling threat from a powerful challenger might be rejected if the target believes it to be a bluff. But this explanation is not applicable to compellence failures that lead to war.<sup>14</sup> The reason is that a challenger's initial use of force dissipates any uncertainty about whether its threat was honest. The target may have previously disbelieved the threat, but the outbreak of military hostilities would correct this miscalculation. For war to occur, then, the target must decide to fight knowing full well that the challenger is resolved.<sup>15</sup> When Bismarck ordered the invasion of tiny Electoral Hesse following a failed ultimatum in 1866, for example, Hessian leaders learned of the impending assault three days before Prussian troops reached their

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<sup>12</sup>Wagner 1994, 598; a similar argument is developed in Reed 2003. Arreguìn-Toft (2005) and Biddle (2004) argue that raw material capabilities poorly predict war outcomes due to the influence of strategy and tactics. But material power is in fact a very good predictor of victory at high levels of asymmetry. To illustrate: states or coalitions with an advantage in pre-war military expenditures below 20-to-1 won 63% of interstate wars fought since 1900 (as tallied by the Correlates of War Project), but when that advantage rises above 20-to-1, the stronger side's win rate increases to 87%.

<sup>13</sup>Belgium's Chief of Staff, Antonin Selliers, recalled informing his superiors at the time of the decision that "the army was not ready and would be unable to give battle to the enemy and contain him" and that crucial fortifications at Liège and Namur could hold out for no more than a month. See Albertini 1953, 459-461.

<sup>14</sup>It also seems to be a dubious explanation for the poor compellence record of the United States if we are to believe the growing body of literature suggesting that democracies can more easily signal their resolve in crises. See, for instance, Fearon 1994; Smith 1998; Schultz 2001; and Leventoglu and Tarar 2005.

<sup>15</sup>In principle, war could also follow a compellence failure if the target launches a preemptive attack, thereby choosing to fight without waiting to learn whether the challenger's threat was a bluff. However, according to Reiter (1995), preemptive wars have occurred only three times since 1815 – and none was launched by the target of a compelling threat.

territory.<sup>16</sup> If the Hessians had initially believed that Bismarck was bluffing, they could have backed down once they realized their error – that is, as soon as Prussian troops began to march.<sup>17</sup> But since Bismarck’s threat failed even after his resolve was revealed, Hessian miscalculation could not be to blame.

Third, a compellent threat could fail if the target feared that acquiescing would strengthen the challenger militarily and change the balance of power. In other words, target states might refuse compellent threats simply to prevent challengers from growing stronger, since the challenger might want to renegotiate once its position improved.<sup>18</sup> But this seems unlikely under conditions of wide asymmetry. When the challenger already boasts a preponderance of power, acceptance of its demands is unlikely to alter the balance of power in any perceptible way. Even when strategically-important objects are at stake, there is little that a challenger could demand that would have much impact on an already-skewed balance of bargaining leverage.<sup>19</sup> It seems farfetched to suggest, for instance, that the transfer of the Sudetenland – a paradigmatic example of strategic territory – had more than a marginal effect on the net balance of power between Germany and Czechoslovakia in 1938.

## A Model of Compellent Threats

In this section I describe a model of compellence and crisis bargaining that offers a different set of answers to the puzzle of compellence failure. In its most basic form, first described in an international relations context by Fearon,<sup>20</sup> the model contains two strategic players: a challenger (state *A*) and a target (state *B*). The target stands in possession of some disputed object, the value of which is normalized (without loss of

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<sup>16</sup>Carr 1991, 134.

<sup>17</sup>There are a few rare examples of such last-minute capitulations. One such case is the 1994 U.S. threat against Haitian military dictator Raoul Cèdras, who resisted President Clinton’s demand to cede power until learning that American military aircraft were preparing to launch – at which point he consented to an “early and honorable retirement.”

<sup>18</sup>See, for instance, Fearon 1995, 1997a, 1998; and Powell 1999, 2006.

<sup>19</sup>A target state’s nuclear weapons program might be an exception.

<sup>20</sup>Fearon 1992.

generality) to 1. The challenger then issues a compelling threat in which it demands some share ( $x_1$ ) of the item and threatens military punishment if the target does not comply.<sup>21</sup> The target may accept or reject the demand: if it accepts, redistribution takes place accordingly, but if it refuses, the two states fight a winner-take-all war over it, each paying some non-negative cost ( $c_i$ ) for fighting the war.<sup>22</sup> Assume that the balance of capabilities is sufficiently clear so that both sides acknowledge the challenger's chances of winning a war to be  $p$ . The challenger's expected value for fighting a war (i.e., a failed threat) is therefore  $p - c_A$ , whereas the target expects to receive  $1 - p - c_B$  by fighting.

Next, I stipulate that the initial round of bargaining takes place in the shadow of a possible future crisis. Once the states observe the outcome of the first dispute, there is a possibility ( $\phi$ ) that a second dispute will arise over an object whose value is  $\pi \in (0, \infty)$ .<sup>23</sup> The same bargaining procedure takes place, with the challenger demanding a share of the new object ( $x_2$ ) and the power and cost parameters  $p$  and  $c_i$  remaining the same. Once the second dispute is resolved, the game ends.<sup>24</sup> The complete model is illustrated graphically in Figure 1.

[FIGURE 1 ABOUT HERE (SEE PAGE 39).]

### *Information and Beliefs*

Both players in the model are informed about  $p$ , which can be roughly characterized as the balance of military capabilities.<sup>25</sup> What is crucial, however, is not that these

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<sup>21</sup>The challenger can also demand  $x_1 = 0$ , which is equivalent to simply making no threat at all.

<sup>22</sup>Note that since the value of the stakes is normalized to 1,  $c_i$  represents the cost of fighting relative to the magnitude of the first-round stakes.

<sup>23</sup>Note that  $\pi$  is not technically a discount factor – it is simply the value of the second-round object relative to that of the first-round. Including a proper discount factor, however, does not change the basic substance of the results below.

<sup>24</sup>I restrict the game to two rounds in order to expose the logic while keeping it mathematically tractable.

<sup>25</sup>Of course, states often bring less than their full national resources to bear in military conflicts. For this reason, it is best to think of  $p$  as being dictated by each side's anticipated level of effort rather than their overall material potential.

beliefs are correct, but rather that the two sides simply agree on them.<sup>26</sup> Stipulating agreement about  $p$  eliminates the possibility that private information about military capabilities will change the dynamics of the bargaining. The only piece of information not known to both players is the target’s value for the cost of fighting – that is, the intrinsic value it places on the human, material, and political damage that it would suffer during war – relative to the stakes of the crisis ( $c_B$ ). The target knows its own value, but the challenger is aware only that  $c_B$  falls within some range of possible values. For simplicity, assume that before the game begins  $c_B$  is drawn from a uniform distribution across the interval  $[0, C]$ , where  $C$  represents the maximum possible value that  $c_B$  might take.<sup>27</sup> We might thus conceive of  $C$  as the target’s “reputation for resolve” at the outset of the game – when the challenger believes that the target’s value for the costs for war is probably low, then  $C$  is small. Conversely, when the challenger believes that the target might have high costs, then  $C$  is larger. The challenger must therefore select its optimal demands in each round within the framework of its uncertainty about the target’s resolve.

Four simplifying assumptions of the model deserve explicit clarification here. First, the model adopts an ultimatum protocol, disallowing counteroffers and permitting the target only two choices: acquiesce ( $Acq$ ) or fight ( $F$ ). Second, once the challenger issues a threat, it is not permitted to back down. As a consequence, its threat is completely credible – the target knows that bluffing is impossible, so it is effectively prohibited from refusing a demand in hopes that the challenger will fail to carry out its threat. Third, the balance of military capabilities ( $p$ ) is assumed to remain constant from one crisis to the next, irrespective of the outcome of the first dispute. The model thus implicitly assumes that neither war nor settlement conveys upon either state any

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<sup>26</sup>Indeed, states sometimes agree on the balance even when they are both wrong. Leaders in neither Iraq nor the United States, for instance, anticipated the synergistic effects of tactics and technology that led to lopsided battlefield outcomes in the 1991 Gulf War. Beforehand, both sides believed that a war would be much more costly for the United States than it actually turned out to be. See Biddle 1996.

<sup>27</sup>Although I bound the interval at zero to simplify the exposition, the interval could in principle contain negative numbers to reflect the possibility that the target state might have some positive utility for the act of fighting, such as a domestic political reward.

military advantage that it did not enjoy before.<sup>28</sup> Finally, I stipulate that the players have accurate and complete information about the balance of military power between them at all times.

These assumptions are widely used in models of international crisis bargaining, but one might reasonably object to them on empirical grounds.<sup>29</sup> In international crises, after all, back-and-forth bargaining is common, and threats are never perfectly credible; moreover, wars and crisis settlements often alter the balance of power, and knowledge about other states' military capabilities is inevitably incomplete. Yet this cost in real-world fidelity yields an important analytical benefit: the assumptions effectively "stack the deck" against compellence failure. The failed threats noted at the outset of this article are puzzling in part because so many factors would seem to have favored their chances for success; it useful, then, to build a model simulating highly favorable conditions for the challenger in order to identify dynamics that might help us understand these cases. The model's take-it-or-leave-it protocol, for instance, favors compellence success by precluding targets from using counteroffers to buy time or to whittle away at the challenger's demands. The second assumption restricts the challenger from backing down once a threat is issued, so its threat to fight is perfectly credible – the target knows with certainty that war will result if it refuses the challenger's demand. Third, because the outcome of the crisis is assumed to have no effect on the balance of power, the target need not fear that capitulation will cause the challenger to grow stronger. Finally, by stipulating that both sides in the model are accurately informed about the balance of power, the fourth assumption eliminates the possibility that a disagreement about relative capabilities could lead to an unsuccessful threat. Each assumption undoubtedly violates our empirical sensibilities, but investigating how compelling threats might fail despite seemingly favorable conditions

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<sup>28</sup>The model differs in this respect from Treisman's (2004) model of appeasement, in which warfighting diminishes a state's material resource base. It is likewise distinct from models in which states bargain over items that themselves influence bargaining leverage (e.g., Fearon 1997a).

<sup>29</sup>Examples of models that adopt some or all of these assumptions include Schultz 2001; Sartori 2002; Slantchev 2005.

can help generate leverage for explaining the most puzzling empirical cases.<sup>30</sup>

## Equilibria

It is straightforward to show that if the target’s level of resolve were public knowledge, there would be only one subgame-perfect outcome of the model: successful compellence. The clairvoyant challenger would demand  $x_1 = p + c_B$  in the first round, and  $x_2 = \pi p + c_B$  (or, if this demand exceeds the value of the “pie,” simply  $\pi$ ) in the second round. Being exactly equal to the target’s value for fighting, the target would accept both demands, and fighting would be avoided. In other words, appeasement would occur even though the challenger cannot commit to future restraint, since the target knows it cannot change the challenger’s beliefs about  $c_B$ .

Compellence always succeeds with complete information because the challenger knows exactly how to calibrate its threat to induce the target to give in. But in the incomplete-information version of the model, compellent threats fail precisely because challengers do not know their adversaries’ level of resolve ( $c_B$ ). The introduction of uncertainty creates the possibility that the challenger will guess wrong and make a threat that proves unacceptable to the target.

There are two types of pure-strategy equilibria in the incomplete-information model: a separating equilibrium in which the challenger intentionally designs its threat so that it carries a risk of failure, and a pooling equilibrium in which the costs of war persuade the challenger to make only a bare minimum set of demands. In the separating equilibrium, only targets with high costs for fighting acquiesce to

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<sup>30</sup>Ultimately, of course, whether the assumptions are “realistic” has no bearing on the model’s deductive logic. But some of these assumptions in fact might be quite reasonable approximations of highly asymmetric crises. First, in highly lopsided dyads the balance of power is so obvious that there is rarely any disagreement about it, so it is defensible to stipulate complete information along these lines. Second, extreme power imbalances are least likely to be altered by the outcomes of crises and wars, so it is reasonable to assume a constant balance of power from one crisis to the next. And Lauren (1972) suggests that the ultimatum structure plausibly depicts the way powerful challengers often structure compellent threats. Many crises, of course, do not take the form of an ultimatum game, but the model is appropriate for those that do.

the threat, while those with low costs always refuse. In the pooling equilibrium, the challenger’s demands are so minimal that all targets opt for appeasement, no matter how small their costs for fighting. Below I characterize the strategies that comprise these solutions; a proof may be found in the Appendix.

### *Challenger’s Strategy in the Separating Equilibrium*

In the separating equilibrium, A issues the following first-round demand, which we call  $x_1^* : p + \frac{C-c_A}{2} - \phi \frac{C+c_A}{4}$ . If B acquiesces in the first round, then in the second crisis A will make a “high” demand, which we call  $\bar{x}_2^*$ , equal to  $\pi p + \frac{C-c_A}{2}$ . But if B fights in the first round, then A must adjust its second-round demand downward. We call this “low” demand  $\underline{x}_2^*$ , and it is equal to  $\pi p + \frac{C-3c_A}{4}$ .

The intuition here is that the challenger finds itself facing a target whose resolve is unknown and decides to take a risk that will enable it to learn new information about where  $c_B$  lies along the interval from 0 to  $C$ . With the possibility of a second crisis looming, the challenger issues a first-round threat that will separate targets into two general types based on their level of resolve. The most highly-resolved targets will stand firm, while all others will capitulate. Specifically, if the target acquiesces to the first threat, then the challenger will know that  $c_B$  equals or exceeds a critical threshold:  $c_B \geq \frac{C-c_A}{2}$ ; conversely, if the target chooses to fight, then it must be the case that  $c_B < \frac{C-c_A}{2}$ . Upon observing either of these outcomes, the challenger can then use its new information to adjust its second-round threat accordingly.

For the challenger to learn anything useful about the target’s resolve, then, its initial threat must be severe enough to incur some possibility of failure. A low-level demand (i.e., the pooling demand  $x_1 = p$ ) would not help an observer discern between resolute and irresolute targets, since both types will acquiesce. Instead, to be informative, compellent threats must be ambitious enough so that they induce only highly-resolved states to resist. The catch is that such demands also carry a greater risk of failure – indeed, that risk is what makes them informative. The risk of

compellence failure is therefore characterized as the “price” challengers pay to learn useful information about their targets’ resolve.

The separating equilibrium is supportable only when the challenger’s costs for fighting are sufficiently low – specifically, if  $c_A \leq C$ . In words, as long as it is possible that the target’s costs might equal (or exceed) those of the challenger, then it will be profitable to try to learn more about the target’s resolve. But if there is no possibility that the challenger has lower costs (i.e., if  $c_A > C$ ), then playing this strategy turns out not to be worthwhile.

### ***Challenger’s Strategy in the Pooling Equilibrium***

In the event that the challenger is certain that its costs for fighting exceed those of the target ( $c_A > C$ ), then playing a separating strategy is no longer optimal. Instead, the challenger will demand  $p$  in the first round and  $\pi p$  in the second round. Since even the most resolved target – that is, a target with no cost for fighting ( $c_B = 0$ ) – will acquiesce to these demands, the target’s response in the first round conveys no new information about its resolve.

### ***Target’s Strategy***

The target’s first-round equilibrium behavior can be described by distinguishing among three types of targets according to their position along the continuum of possible values of  $c_B$ . These types, which we might label “weak,” “moderate,” and “tough,” adopt the following decision rules for responding to the challenger’s first-round threat:

1. “*Weak*” target: If the target’s costs for fighting equal or exceed  $\frac{C-c_A}{2}$ , then only demands greater than  $p + c_B - \phi \frac{C+c_A}{4}$  will motivate it to fight in the first round.
2. “*Moderate*” target: If the target’s costs for fighting lie between  $\frac{C-3c_A}{4}$  (inclusive) and  $\frac{C-c_A}{2}$ , then it will fight if the challenger demands more than  $p + c_B - \phi(c_B - \frac{C-3c_A}{4})$  and acquiesce otherwise.

3. “*Tough*” target: If the target’s costs for fighting are less than  $\frac{C-3c_A}{4}$ , then it will refuse first-round threats greater than  $p + c_B$  and acquiesce otherwise.<sup>31</sup>

Characterizing the target’s second round strategy is simpler: regardless of the target’s costs, it will fight in the second round if the challenger demands more than  $\pi p + c_B$  and acquiesce otherwise. These equilibrium strategies hold irrespective of whether the challenger plays a separating or a pooling strategy.

### ***The Logic of Reputation-Building***

The central mechanism driving the target’s strategy in the first round of the game is reputation-building. By fighting in the first round even though the challenger’s demand might be acceptable on its own terms, weak and moderate targets can get better deals in the second round. As the likelihood of a future crisis increases, the payoff from making this investment increases in tandem. This is shown by comparing the first-round strategies of weak and moderate targets in a one-round game (i.e., when  $\phi = 0$ ) and a game in which the possibility of a future crisis exists ( $\phi > 0$ ). Figure 2 illustrates the comparison. When there is no possibility of a second dispute, appeasement is preferable under a considerably wider set of circumstances than when a second dispute is possible. Indeed, when the shadow of the future looms, weak and moderate targets will reject deals (represented by the shaded region) that would have been acceptable in a single-shot interaction.

[FIGURE 2 ABOUT HERE (SEE PAGE 40).]

Uncertainty sits at the core of this logic. By necessity, any strategic engagement involving reputation effects must entail asymmetric information.<sup>32</sup> The maximum

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<sup>31</sup>Note that tough targets are actually more willing to acquiesce in the first round than either weak or moderate types. The reason is that there is too little time for them to build a worthwhile reputation. In the separating equilibrium, tough targets always fight in the second round, irrespective of the outcome of the first round. Since they cannot build a reputation of any consequence, then, tough targets revert to their strategy in a single-shot game.

<sup>32</sup>Kreps and Wilson 1982.

demand acceptable to a target is known to only itself: challengers can at best venture a reasonable guess about an appropriate threat given the military balance. Targets can exploit this fact by withholding information that might indicate their resolve is weak – in other words, by resisting threats that they would really prefer to accept. When a challenger observes a target resisting, it rationally updates its beliefs about the target’s likely behavior in later crises. But a reputation can only be built if a state’s resolve is inherently unknown to begin with.

The challenger’s first-round strategy in the separating equilibrium is designed to accommodate its adversary’s incentives to masquerade. Notice that the challenger’s optimal demand in the first round ( $p + \frac{C-c_A}{2} - \phi \frac{C+c_A}{4}$ ) declines as the likelihood of a future crisis ( $\phi$ ) increases. The intuition is that the challenger must pay a subsidy – expressed in the form of smaller demands or side payments – to offset the target’s interest in defending its reputation. As the likelihood of a future dispute increases, the target’s value for its reputation grows as well, thus necessitating a larger “discount” on the challenger’s demand. In a game where  $\phi = 0$  – that is, when there is no chance of a future dispute – the challenger’s best strategy would be to demand  $p + \frac{C-c_A}{2}$ . As the shadow of the future grows and  $\phi$  increases, however, then the challenger’s optimal demand declines.

## **The Causes of Compellence Failure**

We can now turn to the central question of this article: when a challenger is extremely powerful, under what conditions might its compelling threats still fail? Recall that, by construction, neither private information about military capabilities nor incredible threats by the challenger are possible scenarios for compellence failure in the model. Relative power also remains constant throughout, so preventive war motives cannot explain unsuccessful threats. Again, it is important to acknowledge that these and other mechanisms (e.g., honor or domestic politics) have surely played important roles in causing compellence failures throughout history. As discussed above, however,

many of these explanations are a poor fit in instances of asymmetry. Moreover, by excluding them from the model we stack the deck in favor of compellence success, thereby consciously restricting our analytical scope to the most puzzling cases.

The question of threat effectiveness can be answered by evaluating the conditions under which fighting occurs in the model (Figure 3). Note that fighting can only occur in the separating equilibrium, since in the pooling equilibrium the challenger is dissuaded from making any threats that carry a chance of failure. Moreover, in the separating equilibrium, fighting is possible in the second round only if there was also fighting in the first-round. This is a consequence of the challenger's strategic choice of demands: the proof in the Appendix shows that if the target acquiesces in the first round, it is optimal for the challenger to make the highest second-round demand that it is certain will be accepted. In equilibrium, then, acquiescence is never followed by war. The overall likelihood of fighting is thus given simply by the probability of first-round fighting. This probability is equivalent to the likelihood that the target's cost for war  $c_B$  falls below the challenger's optimal cutpoint, and is given by  $\frac{1}{2} - \frac{c_A}{2C}$ .

[FIGURE 3 ABOUT HERE (SEE PAGE 41).]

An immediate and somewhat counterintuitive implication of this result is that the probability of compellence success (i.e., appeasement) increases as the target's reputation improves. If the target has a reputation for cost-tolerance – that is,  $C$  is low – then the challenger is more likely to choose the lower-risk pooling demand. As  $C$  increases, however, there are greater potential benefits of drawing out irresolute targets by using a separating strategy. Challengers therefore become more likely to issue threats that carry a risk of failure since they might glean valuable information from them. In other words, *we are more likely to observe successful threats against targets that are already believed to be highly-resolved*. This conclusion is pertinent to empirical research about reputations in crises, in which observed capitulations often serve as an indicator of low resolve.<sup>33</sup> The logic of strategic self-selection implies

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<sup>33</sup>For instance, Huth 1988; Danilovic 2001.

that, without knowing the nature of the challenger’s compellent demands, observed instances of appeasement tell us little about a target state’s reputation for resolve.<sup>34</sup>

### *Divergent Beliefs about the Future*

In the separating equilibrium, moderate and tough types always resist the challenger’s first-round threat (see Figure 3), whereas weak types always appease. But under certain conditions, weak types might also fight. In particular, if the challenger underestimates the target’s beliefs about the likelihood of a future dispute ( $\phi$ ), its first-round equilibrium demand will be miscalibrated and some weak types will refuse. In the model, we can represent divergent views about the future by using  $\phi_i$  to denote each state’s belief about the probability that a second round will be played over a new issue.<sup>35</sup> Stipulate that the two sides arrive at these beliefs independently and that the target is more convinced that future crises will erupt (thus  $\phi_B > \phi_A$ ), but the players cannot observe each other’s  $\phi$  value.<sup>36</sup>

What are the consequences of this disparity? If the challenger’s costs are low enough to justify a separating strategy, its beliefs about the future ( $\phi_A$ ) help determine its first-round equilibrium demand,  $x_1^* = p + \frac{C-c_A}{2} - \phi_A \frac{C+c_A}{4}$ . But as its estimate of the shadow of the future drops, so does the “discount” it applies to induce weak targets to capitulate. (Its second-round demand, however, remains independent of  $\phi_A$ .) In other words, when the challenger does not anticipate making demands in a future dispute, it will make higher demands in the status quo.

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<sup>34</sup>It appears at first glance that the second-round stakes (represented by  $\pi$ ) do not bear on the likelihood that compellence fails in the first round. This is surprising because, intuitively, one might expect that targets would be more likely to fight over small issues today when they expect the stakes to be high tomorrow. But this is probably an artifact of complete information about the second-round stakes – diverging estimates of  $\pi$  would have the same effect as disagreements about  $\phi$ . The central point, though, is the same: the sheer *size* of the second-round stakes is not what motivates targets to fight; rather, it is *disagreement* about those stakes that prevents the challenger from offsetting the target’s reputation costs.

<sup>35</sup>Since the first round permanently resolves the distribution of the first-round stakes and no shift in power occurs between rounds, a future dispute can only occur over a new item.

<sup>36</sup>Note that  $\phi_i$  is not a “belief” in the sense that it is associated with a particular information set; rather, it is best described as private information to which only player  $i$  is privy.

The target’s response to this demand, however, is driven by its own views about the future,  $\phi_B$ . Since a weak target will capitulate to any equilibrium second-round demand, its first-round calculations weigh the cost of fighting against the benefits of dissuading the challenger from making a “high” second-round demand. In equilibrium, the benefits of building a reputation are large enough to motivate weak targets to fight in the first round if and only if  $x_1 > p + c_B - \phi_B \frac{C+c_A}{2}$ . Given that the challenger underestimates the target’s beliefs about the shadow of the future, the probability that its first threat will be refused by a weak target is expressed by  $\frac{\phi_B - \phi_A}{2}$ . Added to the probability that the target will be tough or moderate (and therefore fight in the first round whenever  $\phi_A \leq \phi_B$ ), we have the overall probability of observing compellence failure given disagreement about the likelihood of future crises:

$$\frac{1}{2} - \frac{c_A}{2C} + \frac{(\phi_B - \phi_A)(C + c_A)}{4C}.$$

The central result here is that the level of disagreement, represented by  $\phi_B - \phi_A$ , is positively related to the probability of fighting in the first round. In other words, *as the magnitude of disagreement about the future increases, the likelihood of compellence failure increases proportionately*. Anything that makes disagreement along these lines more likely thus also increases the likelihood that compellent threats will fail. From an empirical perspective, the immediate question is: what factors might cause two adversaries to disagree about the probability of future crises?<sup>37</sup>

### ***Capabilities, Intentions, and Disagreement about the Future***

From a target’s perspective, two factors influence the likelihood of facing future threats: the challenger’s capabilities and its intentions. Challengers with extensive

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<sup>37</sup>Thus far the model has focused on target states’ reputations within a single dyad, but this need not be the case. A simple extension to the model could replace the second-round challenger with a third party. In this case, the power of the third party (rather than the challenger) would drive the target’s reputation-building incentives. Otherwise, the logic of model would remain largely unchanged.

power projection capabilities possess the physical ability to threaten many other interests of a target state. Likewise, challengers believed to have expansionist intentions naturally provoke greater anxiety than challengers seen as benign. Disagreement about either factor could cause a challenger and target to hold very different beliefs about the shadow of the future.

Power projection capabilities are largely observable to the target. The ability to project military force depends mostly on tangible factors – advanced weapons platforms (e.g., aircraft carriers or ballistic missiles), technology, equipment, and sheer numbers – rather than hard-to-observe qualities such as leadership and strategy. In addition, power projection depends crucially on geography: states in close proximity to their targets can threaten more possessions, other things being equal, whereas distant challengers pose a smaller risk. Both players therefore have access to much the same information about the challenger’s physical ability to threaten a target’s possessions in the future. As a result, it is likely that a challenger and target will be able to roughly agree about the challenger’s material capacity to initiate future crises.

A challenger’s intentions, however, cannot be directly observed by the target state. Since only the challenger knows whether it might want to initiate future crises, targets must rely on signals, indices, and other indirect indicators of intent. But a challenger’s ability to credibly communicate its motives is inherently limited: clear signals may be unavailable, and a challenger’s incentives to understate its aims can undermine the believability of assurances of restraint.<sup>38</sup> The upshot is that targets are more likely to miscalculate a challenger’s desire to initiate future crises than its physical ability to do so.

Since a challenger’s power projection capabilities are directly observable but its future intentions are not, a challenger and target are more likely to agree about the former than the latter. The likelihood that they will fail to agree about the overall probability of future crises therefore depends on the relative importance of the

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<sup>38</sup>See, for example, Kydd 2005.

challenger's intentions in estimates about the future.

When a challenger's ability to project military power is minimal, its intentions are largely irrelevant since it lacks the physical ability to make many additional demands anyway. In extreme cases, there may be only one issue that a weak challenger can credibly demand. And since this fact is observable to both parties, the two sides are likely to agree that today's threat probably does not foreshadow a cascade of repeated demands. Even if India would have liked to demand more from Portugal than just Goa in 1962, for instance, both sides knew that it lacked the necessary power projection capabilities to do so. Of course, the challenger's initial demand demonstrates that it is capable of making a threat on at least one issue. But military weakness and geographic distance may nevertheless limit its ability to threaten other possessions – particularly if the issue driving the crisis is an overseas interest of the target. When Britain granted Egypt's demand to withdraw from the Suez Canal Zone in 1954, for instance, there was little risk that Egypt would seize on this victory to make threats against the British homeland. Likewise, Indonesia's demands for the island of West Irian in the 1960s probably represented the full extent of Indonesia's ability to threaten Dutch interests. Even when the target is nearby, a challenger's ability to make additional demands against it can be constrained: in 1920 Italian leaders acceded to Albania's demand for the coastal town of Vlorë, for instance, knowing that their smaller neighbor could demand little else. Thus, as a challenger's physical capabilities diminish,  $\phi_A$  and  $\phi_B$  will tend to converge.

As a challenger attains the necessary capacity to initiate additional crises, however, dissimilar views of the future become more likely. This is because the challenger's intentions – which are inherently uncertain – play a larger role in the target's expectations as the challenger's capabilities rise. When the challenger lacks the ability to pursue its aspirations, the target need not worry about what those aspirations are. But as the challenger attains the means to threaten more of a target's possessions, the target must make uncertain judgments about what the challenger intends to do.

As the target's expectations about the future come to depend more and more on these judgments, the odds of error – i.e., the chances that  $\phi_B$  will exceed  $\phi_A$  – multiply. In short: as the challenger's physical ability expands, the target's calculations about the future depend increasingly on error-prone judgments about intentions, and disagreement is more likely.

The central conclusion is that both military power and geographic proximity can exacerbate information problems in crises, making it more difficult for challengers to credibly signal that they will not make additional demands of a target. Bolstering a challenger's power projection capabilities shifts the target's focus to its intentions, where miscalculation is more likely. Even if a powerful challenger has no future designs against its opponent, merely proclaiming this during a crisis will do little good. A challenger's promises to refrain from making future threats would be believable if a challenger could tie its own hands, but this becomes inherently more difficult as the challenger's power and proximity to the target increase.<sup>39</sup>

Exacerbating the problem is the fact that target states have incentives to exaggerate their fear of future disputes in order to get better deals in the status quo. If target states could simply declare their value for  $\phi_B$  and be believed, then challengers would be able to issue the “correct” equilibrium demand. But since targets will be suspected of overstating this value in order to secure a greater discount on the challenger's demand, their only recourse may be to use war as a signal of resolve.

To sum up: extensions to a standard model of crisis bargaining suggest that when targets believe there is a high likelihood of future interactions with their opponent, they will seek to safeguard their reputations by resisting demands that might otherwise be acceptable. Although challengers have incentives to “discount” their demands to offset the reputation costs of their targets and induce them to acquiesce, the degree to which they can accomplish this depends on the level of congruence in beliefs about

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<sup>39</sup>Problems of “committing” to future restraint are not commitment problems per se, at least in the strict sense in which Fearon and others have characterized them. In their formulation, commitment problems arise when states have incentives to violate the deal at hand, which technically is not the case here.

the likelihood of future crises. Extremely powerful challengers may not intend to initiate additional disputes, but their inability to commit to future restraint obligates target states to fear the worst, thus increasing the likelihood that the challenger will underestimate its opponent's anxieties and insufficiently discount its demands.<sup>40</sup> As a challenger's power projection capabilities expand, this problem becomes more severe. Two conclusions follow. First, demands from nearby states are less likely to succeed, on average, since neighbors are in a better position to make additional demands than distant adversaries. Second, other things being equal, a challenger's compelling threats are increasingly likely to fail as its military power grows.

## Reputation and Power in the 1939 Russo-Finnish Crisis

In this section I investigate a specific crisis episode to illustrate the causal mechanisms highlighted by the model described above. I show that Soviet compelling threats against Finland prior to the Winter War of 1939 were hindered by information problems generated by the Soviet Union's own overwhelming military power. During the crisis, the Soviet Union's inability to reassure Finland about its future intentions convinced Finnish leaders that war was necessary to dissuade the Soviets from taking a predatory stance toward Finland in the future. Finland thus endured a losing war in part to develop a reputation for stubbornness that would improve its bargaining power in future disputes.

The crisis began in late 1938 when Soviet diplomats sought two primary territorial concessions from Finland: first, an agreement that would allow the Soviets to station naval forces on islands in the Gulf of Finland, and second, a favorable revision of the Soviet-Finnish border on the Karelian isthmus. The idea was that these territories

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<sup>40</sup>Note that this problem is not a consequence of the *balance* of power; rather, the assurance problems faced by powerful states stem from their *absolute* levels of power. States' abilities to threaten faraway possessions of other states depend on their own power projection capabilities rather than their relative capabilities within a dyad. The logic of the model thus applies equally to balanced and imbalanced dyads. However, as I have argued, its assumptions seem better suited to the empirical characteristics of asymmetric crises.

would help the Soviet military defend Leningrad, whose location left it vulnerable to possible German offensives through the Gulf of Finland or through Finland itself. Having grown increasingly unnerved about the growth of German power and the intentions of Adolf Hitler, Soviet leaders viewed these concessions as a matter of strategic urgency.

When a year of quiet appeals failed to generate results, the Soviets resorted to a series of military threats. During negotiations on October 23, Foreign Minister Vyacheslav Molotov demanded of his interlocutors “do you want matters to lead to a conflict?”<sup>41</sup> Then, when talks closed inconclusively on November 3, Molotov warned that “we civilians can see no further in the matter; now it is the turn of the military to have their say.”<sup>42</sup> The next day, Josef Stalin himself suggested to Finnish negotiators that they would face the same fate as recently-occupied Poland if they refused to compromise.<sup>43</sup> Finally, during the week leading up to the war, Molotov warned the Finnish Ambassador in Moscow that the Soviet government considered the 1934 Russo-Finnish non-aggression pact null and void as a result of a (Soviet-staged) border incident. Despite these warnings, the Finnish negotiating team, led by prominent politicians Väinö Tanner and Juho Paasikivi, continued to refuse Stalin’s demands. Once it became clear that verbal threats had failed, the exasperated Soviets invaded Finland. For 105 days an outgunned Finnish military fought in snow and ice against hundreds of thousands of Soviet troops before suing for peace in March 1940. The settlement cost the Finns dearly. In the end, Finland’s territorial losses far exceeded the Soviet Union’s original demands and prompted Finland’s bloody revanchist campaign known as the Continuation War, which lasted until 1944.

The failure of Soviet territorial demands in 1939 is puzzling in light of the Soviet Union’s extraordinary military advantage over Finland. Even after nearly all of Finland’s reserves were mobilized in October 1939, Soviet theater deployments out-

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<sup>41</sup>Spring 1986, 214.

<sup>42</sup>Tanner 1957, 66-67.

<sup>43</sup>Dallin 1942, 123.

numbered Finnish forces by a ratio of 3 to 1 in manpower, 80 to 1 in tanks, 5 to 1 in artillery, and nearly 6 to 1 in aircraft.<sup>44</sup> Indeed, the Finnish army suffered from substantial neglect during the 1930s and by the end of the decade it had become a tiny, poor, and ill-equipped force. Internal estimates prepared during the crisis suggested that the army had only enough ammunition to support two months of fighting and enough artillery for three weeks.<sup>45</sup> All of this was well-known to Finnish decision-makers: as Finland's top military officer, General Gustav Mannerheim, noted, "we all knew we were not prepared to meet an attack by a great power."<sup>46</sup> Another general advised the civilian leadership that "without the slightest doubt we shall lose a war [with the Soviet Union]."<sup>47</sup>

Finland also expected no allied support in fighting the Soviets. As negotiations accelerated in early November 1939, Finland turned down both French and British offers of support – fearing that the two powers sought to use intervention as a pretext to open a military front against Stalin<sup>48</sup> – and ruled out the possibility of German assistance.<sup>49</sup> Instead, Finnish leaders reasoned that their best hope for allied assistance lay with Sweden, whose intervention would carry little risk of bringing a wider war to Finnish ground. But in late October Tanner's appeal to the Swedish Prime Minister was immediately and explicitly rejected. "You must not reckon with any such possibility," he was told.<sup>50</sup>

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<sup>44</sup>Van Dyke 1997, 40.

<sup>45</sup>Wuorinen 1965, 351.

<sup>46</sup>Mannerheim 1954, 314.

<sup>47</sup>Upton 1974, 36. In fact, Finland's military performed exceedingly well during the first weeks of the war, exploiting familiar terrain and a particularly harsh winter to inflict several setbacks on the Soviet army. Neither Soviet nor Finnish leaders, however, expected this outcome during pre-war negotiations.

<sup>48</sup>Nevakivi 1976.

<sup>49</sup>*Documents on German Foreign Policy* 1949, No. 232.

<sup>50</sup>Tanner 1957, 47.

### *Reputational Motives in Finland's Strategy*

The model described above helps shed light on the failure of Soviet compellence in 1939, emphasizing that the sheer magnitude of Soviet power may have hampered its threats by causing Finnish leaders to fear that capitulation would embolden Stalin to exploit them further in the future. Indeed, the historical record suggests that few Finnish leaders believed the territorial stakes themselves were worth a fight; rather, they chose war because they viewed concessions as a first step toward Soviet annexation.

In the language of the bargaining model, Finland's costs for fighting ( $c_B$ ) were high. As a neutral state, Finland wanted no part of the European war that seemed to be approaching, preferring to remain on the sidelines to focus on domestic social and economic objectives.<sup>51</sup> Finnish leaders placed a high value on the costs of war – in principle, they would be willing to sacrifice much to avoid them. Their aversion to fighting, however, constituted private information to which Soviet leaders were not privy.

Finland's leaders suspected that the 1939 crisis represented a probe of Finnish resolve, after which Stalin would seek additional concessions if the Finns did not exhibit firmness. Indeed, Finnish leaders were privately convinced that Soviet aims far exceeded the moderate demands that Stalin had made.<sup>52</sup> They knew that Stalin had been eyeing a cluster of Finnish nickel mines in the north and an Arctic port on the Rybachi Peninsula, so it was conceivable to them that concessions in the Gulf of Finland and on the Karelian isthmus might lead to further challenges elsewhere. Foreign Minister Eljas Erkkö expressed a conviction that “the Soviet aim was a gradual infiltration and penetration of their country” and suggested that the Soviets secretly

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<sup>51</sup>Illustrating Finland's high value for peace, Prime Minister Aimo Cajander noted that “we are proud of the fact that we do not have a lot of weapons and rifles rusting away in warehouses or a lot of uniforms mildewing in store. But we do have a high standard of living in Finland and an educational system of which we may be justly proud.” See Tillotson 1993, 94.

<sup>52</sup>In other words, Finland's  $\phi_B$  was high.

hoped to reestablish Russia's pre-1914 borders, which encompassed the entirety of Finland.<sup>53</sup> The Finnish public, once informed of Soviet demands, seized upon a similar rationale: Finland's leading newspaper at the time, the *Helsingen Sanomat*, editorialized that "acceptance of the demands would mean the collapse of the very basis of our independent existence."<sup>54</sup>

Two factors exacerbated Finland's anxiety. First, the Soviet Union's massive military power and lengthy border with Finland enabled it to threaten a wide array of Finnish interests if it so chose. The Soviet navy could credibly threaten any part of the Finnish coastline, while ground forces could invade or bombard fronts ranging from Karelia in the south to the Petsamo mines in the far north. As long as Stalin possessed these instruments, the Finns could never be certain that he would not exploit them again in the future.

Second, Soviet behavior elsewhere in Europe struck Finnish leaders as a particularly ominous barometer of Soviet ambitions. In September 1939, the Soviet Union invaded and occupied eastern Poland. In addition, Stalin demanded "mutual assistance pacts" from Estonia, Latvia, and Lithuania, culminating in outright occupations of all three countries. These events, occurring just weeks before the first Finnish negotiators traveled to Moscow, helped marginalize those in the Finnish cabinet who favored concessions and reinforced the conviction of hawkish officials that Stalin had similar designs against Finland. Paasikivi worried that the current crisis was merely "part of a general Soviet military plan for gaining domination over the eastern part of the Baltic."<sup>55</sup> So when Stalin offered Tanner and Paasikivi a treaty similar to those recently imposed on the Baltic states, Finnish leaders were suspicious. Even Mannerheim, by far the most conciliatory member of Finland's leadership, feared that "the Soviet Government would soon, as had been the case with Estonia, produce further

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<sup>53</sup>Woodward and Butler 1953, No. 278, and Upton 1974, 32. Stalin may have unwittingly fueled such fears when he remarked to Finnish negotiators that "my military advisers would like me to ask for much more." See Jakobson 1987, 45.

<sup>54</sup>Jakobson 1961, 139.

<sup>55</sup>Jakobson 1961, 138.

demands.”<sup>56</sup> Defense Minister Juho Niukkanen employed a contemporary analogy as well, arguing if Finland did not resist Soviet compellence, “we shall face the fate of Czechoslovakia.”<sup>57</sup> In this way Soviet behavior elevated Finland’s estimate of the likelihood of future crises and reinforced the view that revealing low resolve in the status quo would prove costly in the long run.

Importantly, the model explored above does not predict that reputation-minded targets will stubbornly oppose all demands. Reputations are worth fighting for, but only to a point: even the most reputation-conscious targets will acquiesce if the demand is small enough.<sup>58</sup> This observation implies that targets should exhibit a willingness to make some concessions even when they believe future crises to be likely. Indeed, Finland proposed a variety of counteroffers in which it would have conceded some of the outer islands in the Gulf of Finland, portions of the Karelian Isthmus, and the western Rybachi Peninsula in exchange for Soviet compensation.<sup>59</sup> These counteroffers, though they were rejected, suggest that it would have been possible for the Soviet Union to avoid war by making smaller demands or offering more compensation – Finnish leaders were not implacably opposed to bargaining.

### *Disagreements about the Future*

A key insight of the crisis bargaining model is that disagreements about the future (i.e., the disparity between  $\phi_A$  and  $\phi_B$ ) provide the mechanism linking reputational incentives with compellence failures. In the model, when a target capitulates to a demand, it forfeits not only the item in dispute but also its reputation for being cost-tolerant. For a deal to be acceptable, targets therefore require some additional compensation to offset the value of their lost reputation. A challenger would ideally like to know the target’s true value for its reputation because it could then offer

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<sup>56</sup>Mannerheim 1954, 314.

<sup>57</sup>Vehviläinen 2002, 41.

<sup>58</sup>Specifically, if  $x_1 \leq p + c_B - \phi(c_B - \frac{C-3c_A}{4})$ .

<sup>59</sup>See, for instance, Tanner 1957, 65-66.

sufficient compensation to secure a peaceful settlement. But challengers know that targets have incentives to exaggerate the shadow of the future (and, by extension, their own reputation costs) to obtain better deals. The model thus suggests that we should observe crisis participants haggling about the probability of future crises, with challengers assuring their opponents that future demands are unlikely and targets trying to evaluate the credibility of those assurances.

Such haggling can be found throughout the bargaining that preceded the Winter War. Throughout the crisis, Finland attempted to achieve a better deal by reiterating its fears about Soviet intentions. Finnish diplomats resisted a number of Soviet demands by explaining their anxiety that a settlement might culminate in a Baltic-style occupation, or at the very least a *de facto* loss of Finnish sovereignty.<sup>60</sup> Paradoxically, instead of intimidating Finnish leaders into compliance, Soviet power motivated them to demand a more favorable settlement. As Erkko instructed his team when they departed for talks in Moscow, Finland must “forget that Russia is a great power” – quite contrary to what conventional theories of coercive diplomacy might anticipate.<sup>61</sup> While Erkko’s strategy was based in part on a suspicion that Stalin’s threats were bluffs, at the same time he also declared that even if his hunch turned out to be wrong, he nevertheless “would rather let it come to the worst.”<sup>62</sup>

The Soviets were initially receptive to Finnish objections, both revising their demands and offering a small territorial side payment.<sup>63</sup> But for the most part they found Finland’s anxieties confusing and unpersuasive. “We shall not lift a finger to interfere in your own affairs, nor should we touch your independence,” Stalin assured his interlocutors.<sup>64</sup> Stalin argued that since he had no additional ambitions to annex Finnish territory, Finland should feel no trepidation about the deal he was offering.

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<sup>60</sup>See Dallin 1942, 119.

<sup>61</sup>The quotation appears in Paasikivi’s memoirs (1958), but the translation is owed to Upton (1974, 33).

<sup>62</sup>*Documents on German Foreign Policy* 1949, No. 143.

<sup>63</sup>Jakobson 1961, 117-118.

<sup>64</sup>Upton 1974, 30.

Indeed, recently declassified transcripts from Communist Party Central Committee meetings in 1940 suggest that he had no larger designs against Finland and was genuinely puzzled by its intransigence.<sup>65</sup> In the end, however, the Soviet Union's own power worked to its disadvantage, preventing Stalin from credibly assuring Finnish leaders that capitulation in the status quo would not simply provide him with information that he could use against them in the future. Despite his efforts, he could not shake Erkkö's conviction that "acceptance of the 'reasonable and modest' proposals of today would destroy Finland's ability to resist the immodest demands that were bound to follow tomorrow."<sup>66</sup>

The Soviet Union's failed compulsion attempt against Finland in 1939 illustrates the potentially perverse effects of military power in crisis bargaining. Soviet force projection capabilities, along with Stalin's recent aggressive behavior, led Finnish leaders to believe that by agreeing to concessions, they would embolden Stalin to make additional demands in the future. This logic helps explain why Finnish leaders responded so passionately to Stalin's trivial demands, declaring that "we will not consent to bargain away our independence." It also helps clarify why they viewed the Winter War – a limited conflict by any definition – as "a war for existence."<sup>67</sup>

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<sup>65</sup>Kulkov et al. 2002.

<sup>66</sup>Jakobson 1961, 133. A more widely held interpretation of this evidence, adopted to some extent by Fearon (1995, 408-409) and Van Evera (1999, 188), among others, holds that Finland rejected Stalin's deal because it would have undermined Finland's military capabilities. Two pieces of evidence, however, tell against this alternative view. First, leaders on the Finnish side agreed that the Gulf islands Stalin demanded had little military value against the Soviet Union. Mannerheim (1954, 300) argued that the islands in question "were of no use to the country" and that Finland "had no means of defending them"; likewise, Erkkö admitted that "if Russia were to occupy the islands in wartime, Finland could hardly prevent it." See Blücher 1951, 142. Second, although Finnish leaders clearly saw strategic importance in the southwestern naval base of Hangö, which Stalin also sought, this item cannot completely explain Finnish intransigence because Stalin actually rescinded the Hangö demand during negotiations on November 4. In its place, he proposed an alternative arrangement that would have placed Soviet troops on nearby islands. By keeping Soviet troops off the Finnish mainland, Stalin's proposal preserved Finland's coastal defense strategy – which involved forcing an invader into a precarious amphibious assault – thereby sidestepping the Finns' central objection to the Hangö proposal (Mannerheim 1954, 313). If Finland's objections were due to the loss of military power that ceding Hangö would have entailed, Stalin's alternative proposal should have been more acceptable. But Finland rejected it as well. See Dallin 1942, 123; Tanner 1957, 67-68; Mannerheim 1954, 313.

<sup>67</sup>Both statements come from Finland's wartime Prime Minister, Risto Ryti, quoted in

Finnish independence might one day be threatened, they concluded, if they did not resist Soviet compellence in the status quo. Although Soviet leaders significantly attenuated their original demands, the two sides could not agree on a fair “discount” that would compensate Finnish leaders for the risk they incurred by sending a signal of weak resolve. Ultimately, Stalin decided that agreement was impossible, and after a series of unheeded Soviet warnings he opted for war.<sup>68</sup>

## Conclusion

This article has argued that our understanding of the coercive utility of military power in international crises deserves some reconsideration. While most literature about coercive diplomacy assumes that military power bolsters the effectiveness of compellent threats, analysis of a simple game-theoretic model yielded the conclusion that in a world of repeat interactions we should observe exactly the opposite: other things being equal, powerful states should issue the least effective compellent threats. While exceptional military power allows challengers to threaten severe punishment, it also creates unique information problems that hinder challengers’ ability to locate demands that targets would accept.<sup>69</sup>

Reputational dynamics comprise the core of this logic. To summarize: challengers would be better off if they could anticipate their adversaries’ reputation-building incentives and offset them by making side payments or smaller demands. Since these

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the *New York Times*, December 2, 1939.

<sup>68</sup>It is worth asking whether Finland’s behavior indeed impacted its reputation in Soviet eyes. Some historians believe that the war caused Stalin to scale back his aims in Finland, even if he never planned to fully annex it. Lukacs (1992, 56), for instance, argues that “[after the war] Stalin seems to have believed that while a military subjugation of Finland might be possible, it would not be worth its cost: to swallow Finland may be one thing, but to digest it quite another.” At the very least, it appears that the decision to fight in 1939 altered Soviet views of Finland’s cost-tolerance. Years later, Molotov mused: “People are very stubborn there, very stubborn.” See Chuev 1993, 9.

<sup>69</sup>Gartzke (1999, 584) has called for further research about the sources of information problems, aiming to learn whether and when pairs of states “differ systematically in the amount of uncertainty that exists between them.” The central hypothesis here seems to fall into this category, arguing that the severity of certain types of information problems may vary systematically along with observable indicators of military power.

incentives are closely tied to targets' expectations about future disputes, successful compellence requires that challengers correctly evaluate such expectations and adjust their demands accordingly. As a challenger grows more powerful, however, this becomes more difficult. Adversaries' beliefs about the future become increasingly likely to diverge when challengers are powerful because the challenger's private intentions become more important. And since challengers have incentives to underplay the shadow of the future while targets have incentives to overstate it, the two sides may be unable to come to an agreement about how salient the target's reputational interests truly are. Thus, by contributing to information problems between adversaries, military strength may actually undermine the effectiveness of compellent threats in international crises.<sup>70</sup> This argument sheds light on the puzzling observation that compellent threats issued by United States and other powerful countries seem to have a poor record of success: it suggests that these cases are not anomalies but rather represent a systematic pattern. Moreover, it helps us understand why the United States has employed force with increasing frequency even as its military capabilities have grown over time.<sup>71</sup>

Several testable implications follow from the theoretical argument described here.<sup>72</sup> First, and most obviously, the theory predicts that militarily powerful states will make less effective compellent threats, on average, since their ability to project power introduces information problems that can cause bargaining to fail. Second, for similar reasons, states in close geographic proximity to their targets will make less effective

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<sup>70</sup>Fearon (1995) similarly suggests that compellence failures could be explained by private information about the target's resolve. His empirical prediction is different, however, in that he expects power to be unrelated to bargaining failures, whereas I argue that a challenger's military power is in fact an important cause of information problems and thus should be negatively related to the observed success of compellent threats.

<sup>71</sup>See, for instance, Fordham 2004.

<sup>72</sup>Although the focus here is theoretical rather than empirical, it is worth noting that empirical tests of these propositions would need to control for other variables that might influence the outcomes of compellent threats, even though the model's assumptions intentionally exclude many such factors in order to highlight the logic of reputation-building. Elsewhere I conduct a series of quantitative tests that supply confirmation for the model's central hypotheses. See [AUTHOR].

compellent threats. Third, the theory expects leaders of weak states to cite their fear of future demands when explaining decisions to resist more powerful adversaries – much as Finnish leaders did in 1939. A fourth implication of the model is that rational, weak states may fight wars against larger powers fully expecting to lose. Hopeless wars fought against major powers might represent efforts to build reputation, and do not necessarily constitute evidence of false optimism, self-delusion, or irrationality. Finally, the logic contains an implication for the termination of wars as well: it suggests that wars involving major powers may sometimes continue past the point at which the two sides agree on relative power. The theory expects the weaker side to continue fighting until it has sufficiently demonstrated its cost-tolerance, even if it can already foresee the outcome.<sup>73</sup> Indeed, when reputation-building is the objective, a weaker power may actually *prefer* wars that are longer and more costly, contrary to the conventional rationalist assumption that states would rather skip straight to the postwar settlement if they knew what it would look like. This insight may help explain why some wars persist well after the eventual military result seems clear to both sides: when the costs of fighting carry implications for the future, states may prefer to pay them in order to influence the outcomes of future disputes – even if prolonging the fight will not achieve better peace terms in the status quo.<sup>74</sup>

I conclude with three broad observations. First, the argument presented above

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<sup>73</sup>As noted above, the relevant audience here need not be the challenger in the current crisis – it could be a third party that the target expects to face in the future. In this case, a war may continue even after the combatants’ beliefs about each other’s relative power and costs have converged, so long as the target believes it is still transmitting information about its cost-tolerance to a third party. See Slantchev 2003 for a nice discussion of this “convergence principle” as a condition for war termination.

<sup>74</sup>Taking this reasoning a step further, reputation-building logic implies that some states might even wish to inflict intentional self-harm to demonstrate their insensitivity to costs. A grisly illustration of this idea occurs in the 1995 film *The Usual Suspects*, in which the character Keyser Söze kills his own wife and children to demonstrate his toughness to rival mobsters who hoped to use them as hostages. The tactic at work here is sunk-cost signaling: voluntarily paying costs up front to demonstrate one’s pain threshold, thereby increasing the credibility of costly threats or commitments down the road. Lektzian and Sprecher (2007) find evidence for this logic in cases of economic coercion, showing that trade sanctions tend to be more effective if they are more costly to the sender. See Fearon (1997b) for a formal exposition of the dynamics of sunk-cost signaling.

contains an important empirical implication for research about reputations in international crises: it suggests that acquiescing to a compelling threat does not always sully a target state's reputation for cost-tolerance. The model indicates that challengers in military crises can draw new inferences about a target's resolve only when threats are specifically designed to generate them. If a target's resolve is already believed to be high relative to the issue at stake, then a challenger may select a lower-risk strategy that begets minor concessions without revealing any information about the target. My argument is therefore consistent with the finding that acquiescence does not necessarily harm one's reputation for resolve, but it warns against inferring from such observations that reputation effects are absent in crises altogether.<sup>75</sup> The primary effect of a state's reputation may be to prevent a crisis that never happens rather than to influence the outcome of one that does. Reputations "matter," even if they matter off the equilibrium path.

Second, my argument implies that we should not overstate the degree to which crises must be similar in order for reputation effects to obtain. While skeptics of reputation theory are correct in observing that no two crises are exactly alike, it is inappropriate to conclude from this observation that meaningful reputations are rare in international security affairs. The analysis suggests that while crises may differ along many dimensions, they need only raise the specter of military conflict to be "sufficiently alike" to generate reputations for resolve. States that are able to signal that they place a low value on military costs will get better deals whenever military action is the alternative to a negotiated settlement.<sup>76</sup>

Finally, from a practical standpoint, the discussion here suggests that powerful states like the United States could benefit from finding ways to commit to self-

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<sup>75</sup>See Hopf 1995; Press 2005.

<sup>76</sup>Cost-tolerance seems to be exactly what leaders often hope to communicate by resisting threats. Prior to the air war against Serbia in 1999, for instance, Slobodan Milošević remarked to Germany's foreign minister that "I am ready to walk on corpses, and the West is not. That is why I shall win." See Joffe 1999. Likewise, Saddam Hussein's pre-Gulf War comment to a U.S. ambassador that "yours is a society which cannot accept 10,000 dead in one battle" seems to carry the same implication. *New York Times*, September 23, 1990.

restraint. Coercive diplomatic strategies are more likely to work if challengers can persuade their targets that capitulation will not invite future demands. Reassurances such as John F. Kennedy's public pledge not to invade Cuba – which helped resolve the missile crisis of 1962 – appear more important than previously believed when viewed through the framework of the model above. Measures such as public non-aggression pacts, buffer zones, and arms control agreements could similarly aid the effectiveness of compellent strategies if they can credibly dim the shadow of future exploitation. Successful coercive diplomacy requires not only a sharp sword, but also the ability to sheathe it.

## Appendix

PROPOSITION. The strategies described in the text constitute a perfect Bayesian equilibrium.

PROOF. First we conjecture a separating equilibrium for the game  $\Gamma$  in which  $B$ 's first-round behavior helps  $A$  narrow down the range of possible values of  $c_B$ . In this equilibrium  $B$  accepts  $A$ 's first-round demand if and only if  $c_B$  is less than or equal to some cutpoint value  $\hat{C} \in [0, C]$ .

To find the equilibrium, we begin by locating  $A$ 's optimal second-round strategy, conditional on  $B$ 's first-round behavior. Let  $\alpha$  serve as a placeholder for a component of  $A$ 's second-round demand such that  $x_2 = \pi p + \alpha$ . In the second round,  $B$  will acquiesce to the demand  $\pi p + \alpha$  if and only if it cannot obtain more by fighting – i.e., if  $\pi - \pi p - \alpha \geq \pi - \pi p - c_B$ . This gives the condition  $c_B \geq \alpha$ .

If  $B$  plays  $Acq_1$ , then  $A$  knows (by the definition of the proposed equilibrium) that  $c_B$  must lie along the evenly-distributed range  $[\hat{C}, C]$ . Since  $B$  will acquiesce to  $x_2 = \pi p + \alpha$  in the second round if and only if  $c_B \geq \alpha$ , then from  $A$ 's incompletely-informed perspective, the probability that  $B$  will acquiesce to the second-round demand  $x_2 = \pi p + \alpha$  is equivalent to the probability that  $c_B$  is less than or equal to  $\alpha$ , or  $\frac{C-\alpha}{C-\hat{C}}$ .  $A$ 's marginal expected utility for demanding  $x_2$  conditional on  $B$  playing  $Acq_1$  is therefore given by  $(\pi p + \alpha) \frac{C-\alpha}{C-\hat{C}} + (\pi p - c_A) \frac{\alpha-\hat{C}}{C-\hat{C}}$ .

To find the optimal second-round demand conditional on  $B$  playing  $Acq_1$ , we evaluate the derivative of this term with respect to  $\alpha$ , set it equal to zero, and solve for the optimal  $\alpha$ , which turns out to be  $\frac{C-c_A}{2}$ .  $A$ 's optimal second-round demand, given that  $B$  acquiesces in the first round, is therefore:  $\bar{x}_2^* \equiv \pi p + \frac{C-c_A}{2}$ .<sup>77</sup>

If  $B$  instead plays  $F_1$ , then  $A$  knows that  $c_B$  lies along the evenly-distributed range  $[0, \hat{C}]$ . Again we compute  $A$ 's expected utility from demanding  $x_2 = p + \alpha$ , set the derivative of that function to zero, and solve for the optimal  $\alpha$ . This gives  $\frac{\hat{C}-c_A}{2}$ .  $A$ 's optimal second-round demand, given that  $B$  plays  $F_1$ , is thus  $\underline{x}_2^* \equiv \pi p + \frac{\hat{C}-c_A}{2}$ .<sup>78</sup>

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<sup>77</sup>This calculation yields an important restriction. Since the probability that  $B$  fights on observing  $x_2$  cannot be less than zero, then in the separating equilibrium it must be the case that  $\hat{C} \leq \frac{C-c_A}{2}$ . Likewise, since the probability that  $B$  acquiesces on observing  $x_2$  must also be non-negative, then  $C \geq \frac{C-c_A}{2}$ , although this condition is trivially met due to the assumption that  $C \geq 0$  and  $c_A \geq 0$ .

<sup>78</sup>Again, stipulating non-negative probabilities implies the condition that  $c_A \leq \hat{C}$  and  $c_A \geq 0$ , the latter of which is trivially true by the definition of  $c_A$ .

The next step is now to locate  $A$ 's optimal first-round demand  $x_1^*$ , given its uncertainty that a second round will be played. This demand, expressed in terms of  $\hat{C}$ , must be calibrated so that if it is accepted, then  $A$  can be sure that  $c_B \geq \hat{C}$ . Conversely, if  $B$  rejects this demand, then  $A$  will know that  $c_B < \hat{C}$ . We calculate  $x_1^*$  by supposing that  $c_B = \hat{C}$  and locating the demand that would make  $B$  indifferent (and therefore just willing to play  $Acq_1$ ).

First, we specify  $B$ 's equilibrium behavior in the second round, conditional on its first-round response. If  $B$  acquiesces in the first round, it will beget the demand  $\bar{x}_2^*$ . By playing  $Acq_2$  (if the opportunity arises), it accrues the second-round payoff  $\pi - \pi p - \frac{C-c_A}{2}$ . On the other hand, by playing  $F_2$ , it receives  $\pi - \pi p - c_B$ . Given  $\bar{x}_2^*$ ,  $B$  will therefore accept in the second round if and only if  $c_B \geq \frac{C-c_A}{2}$ . Conversely, if  $B$  plays  $F_1$ , it begets  $\underline{x}_2^*$ , which it will accept if and only if  $c_B \geq \frac{\hat{C}-c_A}{2}$ . Since a separating equilibrium can only exist if  $\hat{C} \leq \frac{C-c_A}{2}$ , we therefore need to consider two possibilities for  $\hat{C}$ :  $\hat{C} = \frac{C-c_A}{2}$  and  $\hat{C} < \frac{C-c_A}{2}$ .

If  $\hat{C} = \frac{C-c_A}{2}$ , then  $B$  will accept  $A$ 's equilibrium second-round demand regardless of what  $B$  played in the first round.  $B$  must therefore choose between two scenarios at the outset of the game:  $F_1, Acq_2$  or  $Acq_1, Acq_2$ . The demand that makes  $B$  indifferent between these two scenarios when  $c_B = \hat{C}$  is calculated by setting the two expected utilities equal and solving for  $x_1^*$ . The algebra yields  $x_1^* = p + \frac{C-c_A}{2} - \phi \left( \frac{C+c_A}{4} \right)$ .

On the other hand, if  $\hat{C} < \frac{C-c_A}{2}$ , then  $B$  will reject the demand  $\bar{x}_2^*$ , so  $B$ 's choice is between playing  $F_1, Acq_2$  or  $Acq_1, F_2$ . The demand that makes  $B$  indifferent between these strategy pairs when  $c_B = \hat{C}$  turns out to be  $x_1^* = p + \hat{C} - \phi \left( \frac{\hat{C}+c_A}{2} \right)$ .

What remains is to show that  $A$  prefers to choose its cutpoint  $\hat{C}$  at  $\frac{C-c_A}{2}$  rather than somewhere below. Using the assumption that  $c_B$  is selected from a uniform distribution along  $[0, C]$ , some ugly algebra yields the following expected utilities:  $\text{EU}_A \left( \Gamma \left[ \hat{C} = \frac{C-c_A}{2} \right] \right) = \frac{C}{4} + \frac{3\phi C}{16} - \frac{c_A}{2} - \frac{5\phi c_A}{8} + \frac{c_A^2}{4C} + \frac{3\phi c_A^2}{16C} + p + \phi\pi p$ , and  $\text{EU}_A \left( \Gamma \left[ \hat{C} < \frac{C-c_A}{2} \right] \right) = \hat{C} - \frac{\phi\hat{C}}{2} - \frac{\hat{C}^2}{C} + \frac{3\phi\hat{C}^2}{4C} + \frac{\phi C}{4} - \phi c_A - \frac{\hat{C}c_A}{C} + \frac{\phi\hat{C}c_A}{C} + \frac{\phi c_A^2}{2C} + p + \phi\pi p$ .

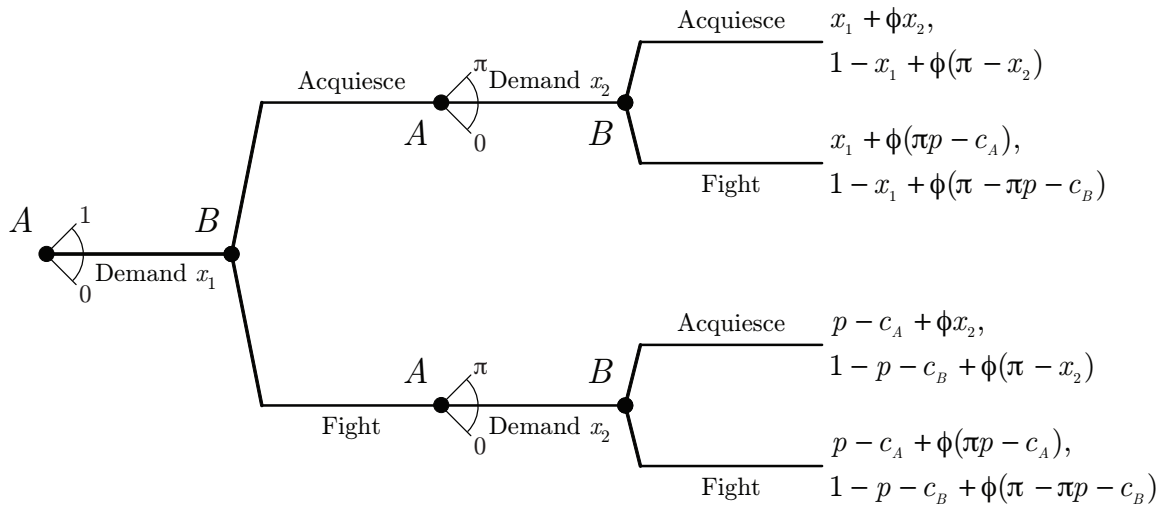
Note that  $\text{EU}_A \left( \Gamma \left[ \hat{C} < \frac{C-c_A}{2} \right] \right)$  is increasing as  $\hat{C}$  approaches  $\frac{C-c_A}{2}$  from the left. We show this by first observing that the second derivative of this expression with respect to  $\hat{C}$  is equal to  $\frac{3\phi-4}{2C}$ , and since both  $C \geq 0$  and  $\phi \geq 0$  by restriction, the function must be concave downward. Evaluating the first derivative at zero will thus give us a maximum value for  $\hat{C}$ :  $\hat{C} = \frac{C(\phi-2)-2c_A(\phi-1)}{3\phi-4}$ . Now, assuming that  $\hat{C} < \frac{C-c_A}{2}$  at this maximum point yields the expression  $C + c_A < 0$ , which is false since  $c_A$  and  $C$  are both defined to be non-negative. Thus, by contradiction, it must be the case that the maximum of the function occurs at

$\hat{C} \geq \frac{C-c_A}{2}$ , implying that  $A$ 's expected-utility function is monotonically increasing as  $\hat{C}$  increases for all  $\hat{C} < \frac{C-c_A}{2}$ .

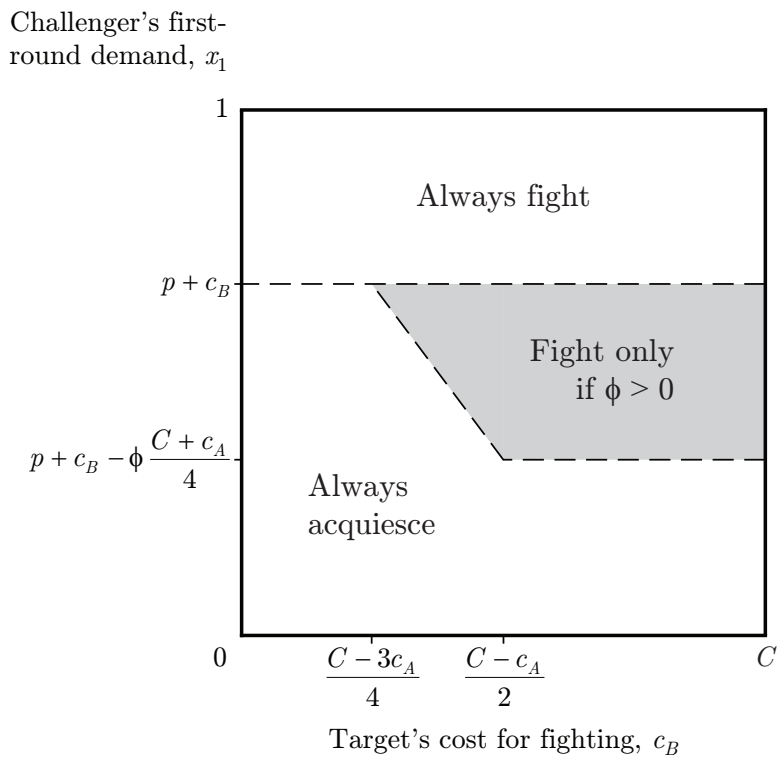
Next we suppose  $\text{EU}_A\left(\Gamma\left[\hat{C} < \frac{C-c_A}{2}\right]\right) = \text{EU}_A\left(\Gamma\left[\hat{C} = \frac{C-c_A}{2}\right]\right)$  and solve for  $\hat{C}$  in order to determine whether  $A$  can do better by selecting the separation cutpoint below  $\frac{C-c_A}{2}$ . This equation yields two possible values for  $\hat{C}$ :  $\frac{C-c_A}{2}$  and  $\frac{C(\phi-4)-c_A(5\phi-4)}{6\phi-8}$ . The first solution implies that  $A$  is better off when  $\hat{C} = \frac{C-c_A}{2}$  than at any smaller value, since its expected-utility function slopes downward as  $\hat{C}$  declines from  $\frac{C-c_A}{2}$ . The downward concavity of the function implies that the function's maximum is located beyond  $\frac{C-c_A}{2}$ , so the second solution necessarily violates the condition that  $\hat{C} \leq \frac{C-c_A}{2}$ . The optimal choice is therefore for  $A$  to choose  $\hat{C} = \frac{C-c_A}{2}$  and demand  $x_1^* = p + \frac{C-c_A}{2} - \phi\frac{C+c_A}{4}$ . This completes the separating equilibrium.

The pooling equilibrium is derived simply by evaluating the case where the cutpoint  $\frac{C-c_A}{2} < 0$ ; i.e., when  $c_A > C$ . The separating equilibrium suggests that in this case  $A$  will demand  $x_1 = p + \frac{C-c_A}{2} - \phi\frac{C+c_A}{4}$ . But since  $c_A > C$  and  $-\phi(C+c_A) \leq 0$ ,  $p$  is larger than this demand. Moreover,  $B$  is sure to acquiesce to  $x_1 = p$  since its expected utility for fighting cannot be greater than  $1-p$ .  $A$  thus demands  $p$ , to which all targets acquiesce irrespective of  $c_B$ .

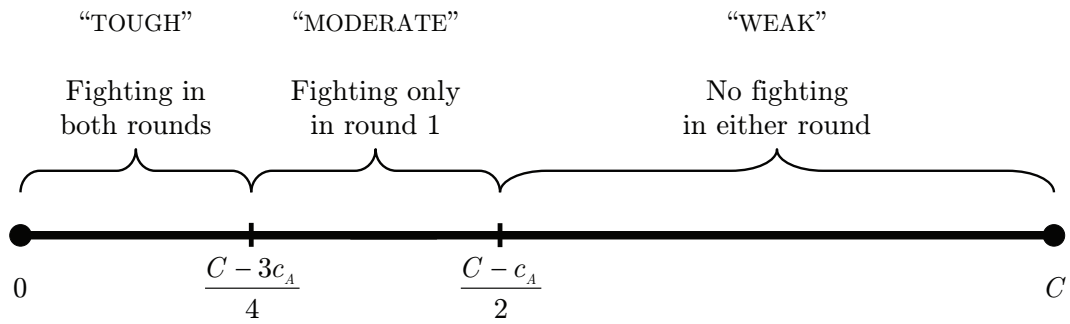
Given that all types of  $B$  acquiesce in the first round when  $c_A > C$ , the above calculations suggest that  $A$  will demand  $x_2 = \pi p + \frac{C-c_A}{2}$ . But since  $c_A > C$ ,  $\pi p$  is larger than this demand. Again, since all targets will acquiesce to  $x_2 = \pi p$  regardless of the true value of  $c_B$ , then  $p + \frac{C-c_A}{2}$  is strictly dominated by  $\pi p$ . Thus, if  $c_A > C$ ,  $A$  will demand  $p$  in the first round and  $\pi p$  in the second round, and all targets will pool on  $Acq$  in both rounds.  $\square$



**Figure 1.** *A graphical illustration of the compellence game.*



**Figure 2.** *The target's equilibrium first-round strategy.*



**Figure 3.** *Outcomes in the separating equilibrium as the target’s costs of fighting vary.*

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