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# **Partisan versus Military Leadership and Peace-building: Adverse Selection and Civil Conflict**

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## Introduction

Civil war wracked Liberia for fourteen devastating years, from 1989 to 2003. Multiple peace agreements were negotiated to end the conflict – from the first set of peace agreements in 1991 to the final Comprehensive Peace Agreement of 2003. Yet, peace proved desperately elusive. Over time, the allocation of power within the peace agreements evolved, with growing shares of power allocated to the leaders of the warring factions. And increasingly, these factions were led by politicians whose main credentials rested in their military or paramilitary backgrounds and skills. These leaders, such as Samuel K. Doe and Charles Taylor, delivered few benefits to their respective ethnic and regional constituencies, but instead plunged Liberia into a chaos of looting, plundering, and ethnic massacres. Yet, such paramilitary leaders as Taylor proved durable. Indeed, he won 75% of the vote in the 1997 election (Harris 1999), with a campaign slogan: “he killed my ma – he killed my pa – I’m gonna vote for him anyha”. Inter-factional fighting over territory, resources, and ultimately, political power kept the war running.

Eventually, fed up with the horrendous violence, Leymah Gbowee led thousands of Christian and Muslim women to gather in Monrovia for months of praying and singing in protest. They were able to pressure Taylor and the leaders of LURD into peace negotiations. The resulting 2003 Comprehensive Peace Agreement, backed up by a substantial force of United Nations peace-keepers, opened the door to a very different kind of political contestation and leadership (Dupuy and Detzel 2010; Ellis 1999). The ensuing 2005 presidential elections pitted former soccer star George Weah against the eventual victor, Ellen Johnson-Sirleaf, who was backed by women’s groups and other community organizations and became Africa’s first female president. These two Liberian women, Ellen Johnson Sirleaf and Leymah Gbowee, were jointly awarded two of three Nobel Peace Prizes in 2011 *“for their non-violent struggle for the safety of women and for women’s rights to full participation in peace-building work”* (Nobelprize.org 2011). Indeed, Johnson Sirleaf and Gbowee fundamentally transformed Liberian society. After active hostilities had ceased, Liberia’s political leadership became radically different from what it had been just a few years before. But it took well over a decade of civil war and armed external intervention to steer the country away from the benighted and tyrannical leadership that had imposed such enormous costs on Liberian society.

Thankfully, the horrific leadership experience of Liberia is not the only possible trajectory for conflictive societies in Africa or elsewhere. Nonetheless, Liberia is hardly unique, and many other poor societies are saddled with belligerent politicians, apparently complicit citizens, and depressing levels of strife and conflict. In this paper, we shall explore the relationship between two conditions that proved to be such a curse in the Liberian case: the presence of sectional leaders with a military or paramilitary background and a proclivity for the use of force. Our argument is simple: the association between these two conditions is neither innocuous nor coincidental. Nor is it a function of pure autocracy in which ordinary citizens have no say in the selection of political leaders. On the contrary, we argue, citizens are often complicit supporters of brutal and self-interested political leaders. More specifically, complicit publics are concerned with two objectives: the flow of public resources and the provision of security for their community. This results from a fundamental dilemma of leadership selection in deeply divided and unstable societies. Under such circumstances, members of social groups at risk often opt for leaders who are prone to violence and bad governance. These ordinary citizens do so at least in part because they lack reliable information about the politicians that contend for their support. Specifically, the willingness of these potential leaders to deliver benefits to their supporters is less observable than their ability to protect group interests against the leaders of other social groups. We shall demonstrate the dynamics of this problem through the use of models of informational economics, and especially the idea of adverse selection. Our paper focuses on the relationship between political leaders and the complicit publics that support them, since the dilemmas that these models illuminate often lead to civil conflict. Our model features three parameters: *type* (whether a leader is munificent or greedy), relative *bargaining power* (between the government and the rebels), and *constraints* on the ability of a leader to divert public resources for purely private gain.

### **Civil Conflict and Peace-Building**

Intrastate armed violence is a curse of much of the developing world. Civil conflict is by far the dominant form of armed conflict in the contemporary world (Gleditsch et al., 2002; Harbom and Wallensteen, 2009), and its costs are enormous (Collier et al., 2003). In recent years, civil war has left up to 800,000 dead in Rwanda alone (Eck and Hultman 2007; UCDB

2010)<sup>1</sup>, 1.5 million over the course of conflict in Angola (1975-2002), and 200,000 in Liberia<sup>2</sup> (Gleditsch and Lacina 2007). Students of civil conflict have therefore devoted a great deal of attention to the conditions under which peace-building in such societies is likely to succeed.

Peace-building involves manifold challenges. One of them is the security dilemma that often exists in divided societies (Posen 1993). As Kalyvas (2006:61) notes, “A security dilemma is said to occur when the breakdown of order creates a situation in which individuals coordinating around focal points (primarily ethnic identities) resort to preemptive violence, or align with warmongering leaders who do so, because of security fears”.

Our argument builds on Kalyvas’ observation on the security dilemma and peace-building and especially his observation that this dilemma leads ordinary citizens to throw their complicit support behind military or paramilitary leaders bent on violent conquest. By systematic analysis of this complicit relationship between citizens and political leaders we uncover the micro-motivations behind the selection of group leaders and demonstrate how an adverse selection problem can often exacerbate tension between a government and a minority at risk within its jurisdiction. Adverse selection implies that individuals within such groups may support leaders that are poor agents for them and that often heighten the risk of open conflict with the government or with other social groups.

Poor leadership is not an inescapable condition. Indeed, one of the main virtues of democracy is that it allows citizens to replace bad leaders with ones who are prospectively better. And even though few poor and divided societies prone to civil conflict have functional democratic institutions, group leaders at a minimum need compliance from their constituents in order to impose order and deter external rivals. This implicit contestation for power forces political candidates to compete for the support of their constituents. Yet, the ability of their constituents to influence the selection of their respective leaders can in some circumstances paradoxically leave them worse off than they might otherwise have been.

By adopting a principal-agent perspective, we shall explore the dilemma of adverse selection facing the public supposedly represented by the leader of a rebel group. We shall thus show why military leaders, rather than civilian politicians, often emerge as group leaders in divided and conflict-prone political systems.

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<sup>1</sup> The high estimate is 800,000. According to the Uppsala Conflict database the most reliable estimate is approximately 500,000.

<sup>2</sup> For Liberia, Lacina and Gleditsch (2007) estimate between 150,000 and 200,000 war deaths, using a more expansive definition than the more restrictive criteria used for estimating battle deaths.

## Agency Costs and Political Representation

Peace-building is a challenging task. It obviously often involves situations in which the parties negotiate in an atmosphere of deep and acute mutual distrust. This mutual distrust is typically accompanied by a strong sense of grievance on the part of at least one or often all parties. Moreover, rebel leaders may have a time horizon in which promises of future peace and prosperity are steeply discounted, which makes it very difficult for them to sacrifice any benefits today in the hope of creating a better tomorrow. Negotiations between governments and rebels are often beset with heavy transaction costs, stemming from their mutual distrust and often their lack of experience in negotiations as well as the safety precautions they may feel compelled to take. And whatever settlement they reach are often jeopardized by enforcement problems, especially if there is no sufficiently strong third party to back it up.

While we acknowledge all these obstacles to peace-building, our focus in this paper is on a less appreciated hazard of bargaining in such contests, namely the risks inherent in the relationship between the leaders of the negotiating parties and their respective followers. Specifically, the relationship between ordinary members of specific social communities and their political leaders is often tenuous and marked by a lack of (leadership) accountability. Of course, any representation implies a risk that the political representative will not faithfully pursue the interests of those that he or she ostensibly serves. But in divided and conflictive societies these risks are typically magnified, since these societies are often poor and unstable, and since the mechanisms of popular governance (democracy) are often poorly developed and lacking in enforcement. More than anything else, however, we see these problems as arising from a fundamental lack of credible information on the part of ordinary citizens. In more technical terms, poor and divided societies generically suffer from deep and fateful information asymmetries between political leaders and their supposed masters: ordinary citizens. These information asymmetries give rise to serious agency problems, as they may indeed in any relationship in which ordinary citizens do not have adequate information about the preferences, skills, or behavior of those that ostensibly represent their interests.

In this paper, we represent these relationships of representation, or delegation, and the information problems inherent to them, through the use of principal-agent theory. Principal-agent theory assumes a relationship in which one (or more) principal(s) – persons or groups in which residual rights to authority or ownership are ultimately vested – delegate to one or several agents, who are thus authorized to act in the principals' place and on their behalf. Principal-agent relations abound in social life. They include owners and renters, shareholders and management, patients and doctors, customers and mechanics, and supervisors and

subordinates. Indeed, any situation involving a party, the principal, delegating a task to an agent who possesses an information advantage can be considered a principal-agent relationship.

Principal-agent relationships are also evident in the politics of democracy and governance. All representative democracies, of course, involve some delegation, and indeed the quality of that delegation is of central normative concern to students and framers of representative democracy. In many post-conflict situations, building a framework of democratic representation is an integral part of the peace-building process. Elections serve as the dominant institution as the first step in democratization in post-conflict societies. Yet, even when democratization is not inherent to the process of building or preserving peace, the relationship between political agents and their respective constituents is often as critical as the relationship among these political leaders.

Central to principal-agent theory is the notion of agency loss – the difference between what the principal wants and what the agent delivers. Agency loss is evident in political representation between politicians (agents) and their principals (citizens, in divided societies often identified with particular social groups). When citizens delegate to politicians, they run the risk that the latter will choose actions that the citizens themselves would not have adopted, had they been in the politicians' place. Such agency problems are an increasingly important concern among students of democratic political institutions (Strøm, Müller and Bergman 2003).

Principal-agent theory, which has its origins in the insurance industry, highlights two particular problems flowing from information asymmetry. The first such problem is *moral hazard*, which refers to the temptation of someone who has purchased insurance (here: an agent) to take undue risk. The central problem is the company's inability to monitor the agent to determine whether she takes on undue risk, a problem of hidden action. The upshot is that those who have purchased insurance, because of their own behavior and unbeknownst to the insurer, increase their likelihood of making subsequent claims. In politics, moral hazard (incomplete or imperfect information about actions) may occur when political agents (politicians) have the opportunity and the incentive to take hidden action contrary to the preferences of the principal (the citizens). This can easily happen when politicians make critical decisions behind closed doors or when they form a cartel for mutual benefit. Moral hazard, induced by institutions that allow politicians to act unchecked and without proper oversight, thus enables political officials to act with impunity and to disregard public demands.

The second problem, and the focus of this paper, is *adverse selection*, an incomplete information problem regarding the agent's type. For the insurance industry it applies to the type of customers likely to purchase insurance, who may not be representative of the population as a whole. On the contrary, the individuals most likely to engage in risky or careless activities are also the ones most likely to purchase insurance. And as long as the insurers are unable to distinguish high-risk clients from low-risk ones, they are likely to be saddled with a customer base dominated by the former. Adverse selection, as well as moral hazard, can thus undermine the market for insurance, and their analogs in politics may jeopardize the civil peace. Adverse selection in politics refers to the risk that political principals (citizens) may systematically delegate to agents of the wrong "types" (such as those most attracted by the spoils of office or those with more charm than skills). Adverse selection in fragile polities may occur even before civilian institutions have a chance to work, if the political regime tends to select politicians who appeal narrowly to sectional interests (or fail to represent anyone). This bias may be built into the newly designed institutions precisely to accommodate those potential spoilers who can most easily threaten the peace (Stedman 1997). Such spoilers are often politicians firmly attached to their own respective groups. Their hands are often strengthened by the fact that for ordinary group members, such politicians may be more identifiable and credible deliverers of policy benefits than politicians inclined to make cross-group appeals. Peace-builders representing the international community may therefore favor these group-based politicians to lower the risk of violence.

For similar reasons, peace-builders may be inclined to accommodate politicians with easy access to arms (and thereby credibly commit to a strategy that would "spoil" the peace process), such as the leaders of military or para-military organizations. But in the long run, the politicians with the most immediate access to arms or the strongest factional credentials may not be the ones most likely to foster political integration and cross-group cooperation (Roeder and Rothchild 2005). Adverse selection may thus undermine a central goal of democratic governance: putting in place the politicians least likely to misuse their power. This is the central point that shall be demonstrated in our formal model presented below.

The next section presents a formal mathematical analysis of the extent to which such failures of democratic representation may occur. We further examine the effects that adverse selection of political leaders may have on peace-building processes. We explore the situations that can lead to a democratic civil peace as well as the conditions that instead may produce a negative peace of entrenched kleptocracy.

## **An Adverse Selection Model of Peace Agreements**

Political recruitment in conflict-torn societies can be risky, since politics is ultimately about control of the coercive power of modern states (McGuire and Olson 1996; Bates 2008). Even in fragile states with relatively few resources, the coercive potential of the state may be considerable and the potential damage from its abuse frightening. Selecting the individuals who will be in a position to use this power is therefore hardly trivial. What makes leadership selection in such societies particularly precarious is that they are typically characterized by two circumstances which are independently troubling, and which jointly can lead to choices that produce disastrous consequences for society as a whole. One of these conditions is that society is deeply divided into different ethnic, regional, or religious groups, each of which suspects adversarial behavior on the part of at least some of the others. Moreover, if each group tends to select its leaders separately, there is little room for politicians who seek to make cross-group appeals. The other troubling circumstance is that no group can be sure that political contestation will remain civilian and constitutional. In other words, all groups know that the differences between them may be settled not through elections or democratic bargaining but rather through the threat or the actual use of brute force. While all groups may sincerely prefer peaceful settlements of their disputes, none can trust that all the relevant parties will abide by such means.

Our model of decision-making in such peace-building situations features elements of adverse selection. In addition, of course, the parties may face problems such as moral hazard or transaction costs, but we choose here to focus on the adverse selection problem, whose implications, we believe, are not widely recognized in the study of peace-building processes.

The formulation of the logic of our game follows from a game theoretic, mathematical analysis. We assume a situation in which a government is negotiating with a party of rebels representing an “aggrieved” social constituency. This social group is represented in the negotiations by a leader, who acts as an “agent” of his or her constituency. This constituent public can choose to support or to spurn the claims of representation made by the rebel leader. The degree of support can vary considerably from tacit complicity to wholehearted and earnest allegiance. The process of selecting a rebel leader is inherently less formal than in a functioning democracy, but in some ways not too different, either. In the same way that a political candidate in a U.S. primary election can claim to represent a segment of the population and seek its support as a vehicle for the general election, the leader of a rebel movement enters into a military conflict with the government claiming to represent a group of the people.

We do not model the nature of the government's representation, but assume that the constituency of the rebels has a choice between two different types of leader (representatives): on the one hand a politician trained by and affiliated with a political party and on the other a military leader with experience from the organization of armed combat. In the Liberian case discussed at the outset, think of Ellen Johnson-Sirleaf and Charles Taylor, respectively, as representing these two types of leaders. (And for simplicity, we shall use female pronouns to characterize the politician and male ones to refer to the military leader.) The rebel leader will negotiate with the government over the division of a social product (a social "pie"). Each slice of pie exhibits the characteristics of a club good, composed of security and material benefits. If the negotiating parties agree on its division, this agreement will be peacefully implemented, thereby avoiding any social cost due to conflict. The rebel leader will then be able to retain some share of the slice of the social product (including security) negotiated for his or her constituents, to whom the remainder will be passed on. And once the rebel constituents have chosen their leader, they have no recourse to contest the share he or she takes of the social surplus that falls to their constituency. If the rebel leader and the government cannot come to agreement, however, they will resort to violence, and the solution to their conflict will be given by a Contest Success Function, which we shall describe below.

The rebel negotiator serves as an agent for the constituency that supports his or her group. His or her job (at least in the minds of the relevant segment of civil society) is to negotiate the best deal possible for this constituency. The problem is that this complicit public does not know whether the agent will in fact negotiate the best deal for them. The leader of the group thus has considerable discretion in the bargaining process. He can bargain hard for as large a slice of the pie as possible to distribute back to his constituency or he can bargain hard for a deal that favors him but offers little to the broader public, or he can devote little effort in negotiations, achieving little for himself or his constituency. Different types of leaders will behave differently. Given that the public does not know exactly what happens during negotiations, they have no way of knowing what type is "negotiating on their behalf". In this respect, this is an adverse selection problem, a situation of delegation under asymmetric information.

The choice of leadership within the rebel constituency affects the solution of our game in the following ways. Recall that the rebels have a choice between a partisan politician and a military leader. We assume that the politician will be accountable to her followers through a political party in such a way that her "cut" of the surplus offered to the rebels is constrained. In other words, the politician may be more or less self-interested but her behavior is limited

by the party. Given these constraints, political leaders will exhibit less variation in terms of munificence and greed. We therefore model all of them as the same type.

The military leader, on the other hand, does not have such an accountability mechanism, so that his take will depend strictly on his “type”. We assume that the military leader’s type is unknown to his political constituency. All contenders for such office may claim to be selfless servants of their people, but the latter have no way of knowing whether this is an accurate representation of their candidate’s true aspirations. Thus, military leaders may either be munificent and willing to settle for even a very small share of the social surplus, or they may be selfish and greedy, in which case they may end up retaining a much larger share of the social surplus than a politician would have done in the same circumstances.

We assume that the choice of rebel leader affects the outcome of the bargaining between the government and the rebels in the way that follows from the fact that having a military leader enhances the rebels’ capability for fighting and hence the government’s willingness to yield a larger share of the social surplus in order to avoid conflict.

Our game is conducted at two levels and in two stages. The game begins with nature determining whether a leader is “greedy” or “munificent”. Without knowing what nature has chosen, the complicit public,  $J$ , selects whether the leader of the rebellion,  $j$ , is a military commander or the head of a political movement or party. This choice has implications for the type of policy solution that is achieved through bargaining. The peace negotiation is conducted at another level between players  $i$  (the government) and  $j$  (the rebel leader). As is demonstrated below, in this subgame, military leaders can more credibly threaten to resort to war. This outside option increases the rebel’s bargaining power vis-à-vis the government. The size of the negotiated portion of the settlement is referred to as  $q$ , such that  $0 < q < 1$ .

During the next stage of the game,  $j$  distributes a portion of  $q$ , which we call  $x$ , to the rebel constituency, such that  $0 < x < 1$ . A munificent leader earns a special benefit from allocating an extra portion of  $x$  to his constituency. A greedy leader keeps a disproportionate share,  $1-x$ , for himself. Payoffs in the Adverse Selection Game are determined by the combination of  $x$  and  $q$  for  $J$  and  $1-x$  and  $1-q$  for  $j$ . Table 1 below outlines the game. Also see Figure 1.

Table 1. Adverse Selection Game Summary

Players	J -- rebel “public” (principal) i, j – government, rebels leaders (agents)
Information	Level 1: Asymmetric Incomplete information (between principal, J, and agent, j)  Level 2: Imperfect complete information (between the negotiators, i and j).
Stage 1 Level 1	Nature chooses the type of leaders (greedy or munificent) <ul style="list-style-type: none"> <li>• J decides to support a military leader or a political leader without knowing the type of military leader (greedy or munificent).</li> </ul>
Stage 2 Level 2	Takes place under the shadow of armed conflict: <ul style="list-style-type: none"> <li>• Player i (government) offers a peace deal</li> <li>• Player j (rebel leader) chooses to accept or return to fighting</li> <li>• If j chooses continue to fight, both players i and j choose an optimal level of fighting given their respective resource endowments and the other player’s fighting effort drawing on the technology of the Contest Success Function and obtain a payoff of <math>p_j</math>, which is a share, such that <math>0 &lt; p &lt; 1</math>, and the game does not move to Stage 3.</li> <li>• If j accepts the peace agreement, he obtains an outcome of <math>q</math>, which is a share of the total prize, such that <math>0 &lt; q &lt; 1</math>. The government’s share is <math>1-q</math>.</li> <li>• Military leaders possess a bargaining advantage through the outside option of returning to war. Politicians lack this advantage, but are subject to better control and oversight by their constituency.<sup>3</sup></li> </ul>
Parameters in Stage 2	$Y_i$ = income to group i r = resources F = fighting effort E = non-fighting expenditures (productive effort) p = share of total income Y
Stage 3 Level 1	A portion, $x$ , of the share of benefits negotiated in the peace agreement, $qY$ , are distributed to civil society, J. A portion, $1-x$ , is taken by the leader, j, for himself. <ul style="list-style-type: none"> <li>• The type of military leader, greedy or munificent, determines the relative size of <math>x</math> given to the complicit public, J, and how much is taken by j. Munificent leaders obtain a special benefit, <math>a</math>, that leads them to be more generous with the allocation of <math>x</math> than greedy leaders, such that <math>a &gt; 1</math>.</li> <li>• Political leaders are more constrained than military leaders and therefore will be unable to take as big a share <math>x</math> even if they are greedy. These constraints mean that there is only one type of political leader.</li> </ul>

Payoffs	Payoffs are determined by the proportions, $q$ (the share of the benefits decided by the peace agreement), and $x$ (the share of these benefits distributed to the rebel constituency). Payoffs are the product, $q \cdot x$ , such that $0 < q < 1$ and $0 < x < 1$ . Payoffs for $x$ are reciprocal between allocations to J and j, such that J receives $x$ or $1-x$ . A constant, $a$ , is added to the product, $q \cdot x$ , when the principal, j, is a “munificent” type.
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Given that this Adverse Selection Game is conducted at two levels, between  $i$  and  $j$  and between J and j, the bargaining subgame is presented first to establish the bargaining advantage of military leaders as opposed to political leaders. This subgame is played between  $i$  and  $j$ . After the presentation of this subgame, we turn our attention to the adverse selection problem.

### The Peace Negotiation Subgame (Stage 2, Level 2 of the Adverse Selection Game)

The bargaining subgame takes place under the shadow of armed civil conflict. Before considering the actual bargaining process, we must first consider the context of conflict that shapes the nature of the negotiations. Through the use of a contest success function (CSF), we explicate the bargaining process under conditions in which armed conflict is the outside option.<sup>4</sup> Widely employed by economists, contest success functions are used to analyze situations of unenforceable contracts, and often used to study conflict (Skaperdas 1996). CSFs offer a flexible technology for modeling the dynamics of civil conflict.

Like most contest success functions, we assume that each belligerent has some initial endowment of resources,  $r_i > 0$ , which are allocated into productive,  $E$ , and fighting effort,  $F$ , such that fighting can consume from 0 to  $r_i$  resources, such that  $F_i \in [0, r_i]$ . The relative capabilities of the two groups (in this case the relative capacities of the rebel and government armies) play a critical role in the contest success function. We use the same notation which identified the respective agents of the government and rebel group,  $i$  and  $j$ .

Collective income,  $Y$ , is assumed to be the sum of productive effort (resource allocations minus the costs of fighting or  $E$ ), such that  $Y = (r_i - F_i) + (r_j - F_j)$ ; which can also

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<sup>4</sup> Gordon Tullock (1980) conceived of the contest success function, CSF, and Jack Hirshleifer, Herschel Grossman, and Stergios Skaperdas did the most to apply it to conflict settings. We use the ratio form of the CSF rather than the logistic difference form and in this respect our modeling of the contest success function is a modification of Hirschleifer (1991, 2001).

be expressed as  $Y = E_i + E_j$ .<sup>5</sup> Collective income,  $Y$ , is divided between the two parties according to their fighting effort. The proportion of collective income that the rebel group ( $j$ ) gets is a function of its fighting effort divided by the total fighting effort of both groups, such that:

$$p_j = \frac{F_j}{F_i + F_j}. \text{ This is the basic CSF.}$$

Given this division mechanism, each group maximizes its share of the collective income,  $Y_j = p_j(Y)$ ; which implies that all productive income is commonly pooled and can be captured by either side through fighting, such that:

$$Y_j = \frac{F_j}{F_i + F_j} [(r_i - F_i) + (r_j - F_j)]. \quad (1)$$

We assume that both groups simultaneously make their decisions about fighting effort; we therefore adopt the Cournot solution concept<sup>6</sup> and solve for the respective reaction curves for the two groups. Substituting group  $j$ 's reaction curve into equation 1 and solving for  $F_j$  again, we find that group  $j$ 's equilibrium level of fighting effort is a function of initial resources. This holds as long as the joint equilibrium is an interior solution; in other words,  $F_i < r_i$  and  $F_j < r_j$ . Thus the equilibrium levels of fighting for  $i$  and  $j$  are:<sup>7</sup>

$$\frac{F_i^*}{F_j} = \frac{(r_i - F_i) + (r_j - F_j)}{F_i + F_j} \quad (2)$$

and

$$\frac{F_j^*}{F_i} = \frac{(r_i - F_i) + (r_j - F_j)}{F_i + F_j}. \quad (3)$$

It is reasonable to assume that  $j$ 's capabilities are lower than the government's or ( $i$ 's), such that  $r_i > r_j$ , and that  $j$ 's marginal utility of fighting will be relatively higher than  $i$ 's. This can be seen readily demonstrated through the use of a numerical example to calculate the best response for each actor and to determine the equilibrium result given these endowments.

Assume that  $(r_i, r_j) = (200, 100)$ , which is to say that the government's resources are twice as

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<sup>5</sup> Productive effort for group  $i$  is  $E_i = r_i - F_i$ .

<sup>6</sup> The Cournot equilibrium concept is often associated with an economic duopoly in which two firms must make market decisions without knowing what the other has chosen (imperfect information); we adapt the concept to two parties involved in conflict.

<sup>7</sup> We assume that the equilibrium fighting efforts of  $i$  and  $j$  ( $F_i^*$  and  $F_j^*$ ) jointly compose an interior solution (i.e.,  $F_i^* \in [0, r_i]$  and  $F_j^* \in [0, r_j]$ ).

large as those of the rebels. Plugging in these values into equation 4, we find that  $(F_i, F_j) = (75, 75)$  and  $(E_i, E_j) = (125, 25)$ ; however, given the equality of  $F$  (that is the absolute output of fighting, not the proportional effort invested in fighting), income for both groups is also equal, such that  $(Y_i, Y_j) = (75, 75)$ . Note that while the overall costs of war are the same as in the previous example, group j now devotes a substantially greater proportion of its resources to fighting than group i does. In this example, group i (the government) devotes  $3/8$  of its resources to fighting while group j (the rebels) spends  $3/4$  -- twice as much. Given these relative capabilities, the rebel army devotes proportionally twice as much to fighting as the government does. This result has tremendous implications for understanding asymmetric conflict – it means that the weaker power will allocate proportionately more resources to fighting than the richer belligerent.

More generally this can be seen mathematically; whereby differentiation of  $Y_j = p_j Y$  produces the following:

$$\frac{\partial Y_j}{\partial E_j} = \frac{F_j}{F_i + F_j} \quad (5)$$

and

$$\frac{\partial Y_j}{\partial F_j} = \frac{F_i(E_i + E_j)}{(F_i + F_j)^2}. \quad (6)$$

The partial derivative  $\frac{\partial Y_j}{\partial E_j}$  represents the marginal utility of fighting, while the partial

derivative  $\frac{\partial Y_j}{\partial F_j}$  can be considered to be the marginal utility of engaging in productive output.

Equation 5 shows that as j (the rebels) expends resources on productive output, i (the government) will capture most of them; whereas in equation 6, the less well endowed group will retain a greater share of its productive output by investing in fighting. Fighting is thus relatively more attractive to the poorer group, the rebels. This group has less to lose by engaging in armed conflict and will therefore devote most, if not all, its resources to fighting. A group with a poorer resource endowment thus has a higher marginal utility for fighting than for productive activity. In other words, given that each group has a choice whether to allocate its resources towards positive production or towards fighting, a moderately weaker group (one that is able to consume enough resources to match the fighting effort of the stronger belligerent) will find that it pays to fight. This is the essential result of Hirshleifer's "Paradox

of Power” (1991; 2001) and is also found in different models by Butler and Gates (2010), and Mehlum, Moene, and Torvik (2006). We shall refer to this as the “nothing left to lose” result.

To evaluate the bargaining effectiveness of the military leader of a rebel movement, we need to compare the relative value of the negotiated settlement,  $q_i(Y)$ , as compared to the value afforded through armed conflict,  $p_i(Y)$ . This is the central feature of the sub-game – the comparison of the relative value of accepting the ex ante certainty of a peace agreement to the expected value of fighting (which in turn is determined by the contest success function). This means that players engaging in backwards induction (i.e. looking forward, reasoning back) will assess the relative outcomes of pursuing peace or conflict. Ultimately, as long as the value of the peace agreement is greater than the share a military leader could earn through fighting, he will agree to a peace agreement, such that  $q_i Y > p_i Y$ . Substituting this into equation 1,

$$q_i > \frac{F_i}{F_i + F_j} (r_i - F_i)(r_j - F_j). \quad (7)$$

Given asymmetric capabilities, such that  $p_i(Y) > p_j(Y)$  and  $F_j < r_j$ , the military leader (j) will only agree to a disproportionate share of the negotiated peace settlement, such that  $q_j Y' > p_j Y$ . Not only is the rebel leader able to obtain a greater share of the pie, but he also gains a peace dividend in the form of  $Y'$ , such that  $Y' > Y$ . ( $Y'$  is the collective income earned by not fighting, whereas  $Y$  is the collective income earned in fighting.) This means that he receives a higher income that does not include the costs of conflict, thereby  $Y' > Y$ .

Such asymmetries between the government and a rebel group are typical of most civil conflicts and wars. In nearly all cases of asymmetry, the government will hold the advantage. Superficially, asymmetry would appear to be an advantageous environment for a peace agreement. After all, it would appear that the weaker party could be “bribed” with a guaranteed share of the political pie. Alas it is not that easy. The “nothing left to lose” result, driven by the higher marginal utility for fighting, makes it much more difficult for peace negotiations under conditions of asymmetry. As long as the weaker party is not completely outmatched in resources that can be devoted to fighting, it will prefer to fight rather than accept a proportional stake in the peace agreement. The implication is that in order to convince a military rebel leader to quit fighting,  $q_i Y'$  will have to be distributed non-proportionally. The military leader, possessing a credible threat to fight (for which he maintains a higher marginal utility), can demand a disproportionate share of the negotiated settlement. Whether he negotiates for himself or for “his people” is the subject of the adverse selection subgame.

Lacking this credible threat, a politician designated to negotiate on behalf of a group, will at best be able to negotiate a peace such that  $q_j \leq p_j$ . While the proportions of the pie,  $q_j$  and  $p_j$ , may be unequal, income is likely to vary, such that  $Y' > Y$ . Thus whether the portion of non-fighting income is less than the portion of income earned from fighting,  $q_j Y' \leq p_j Y$ , will be determined by the relative differences between the  $Y$ 's (incomes earned from warfare or from peace) and the  $p$ 's and  $q$ 's (the relative portions of total income earned in these environments). If the difference between a war economy and a peace economy is not too great, it will be difficult for her to negotiate a deal as good as the stream of income coming from fighting. The difference in the relative value of  $q_j(Y')$  bargained by a politician and that bargained by a military leader will decline as the relative capabilities of the rebel and government armies converge towards parity. And the bargaining advantages of the military rebel leader over the civilian politician thus dissipate. Given that the bargaining advantage of military leaders stems from their relatively high marginal utility for fighting as compared to the government (the stronger party), this advantage paradoxically diminishes with increasing relative military capability. At precise parity, a military leader and a politician will possess similar bargaining positions, and negotiated settlements whether negotiated by a military leader or a politician will tend to 50-50 solutions with the government. In most cases, however, asymmetry is the rule. And in such situations, military leaders will hold the advantage.

In some situations one is much weaker than the other (such that  $F_j = r_j$ ),. Under such conditions the rebel group is in corner solution, whereby all resources are spent on fighting, any extra fighting effort made by the government gives them a superior military advantage. Given a choice to sue for peace a rebel group facing such preponderant power will choose peace over war.

Analysis of the bargaining subgame is critical for understanding the fundamental aspects of the adverse selection game. What it demonstrates (rather than asserts) is that military leaders *ceteris paribus* have a stronger bargaining advantage vis-à-vis the government than a purely political leader. The difference is the credible threat of armed violence.

### **The Adverse Selection Subgame (Stages 1 &3, Level 1 of the Adverse Selection Game)**

The adverse selection subgame fundamentally involves the rebel group's choice between a military and a political leader to head peace negotiations with the government. The rebel's constituency makes its decision with incomplete information about their leader's type. Given

the institution of the party apparatus, political leaders are more constrained nullifying the role of the leader being “greedy” or munificent. Military leaders are relatively unconstrained so in this case type matters more for them. The fundamental dilemma for the principal is whether to choose a military agent who can drive a better deal with the government, but may bargain only for himself and not for the broader constituency. In terms of the game’s payoffs, a military leader as demonstrated above can obtain a higher  $q$  than a politician, but a greedy agent will take most of this payoff for himself and allocate only a small portion to the constituent public.

Figure 1 provides an extensive form representation of the adverse selection subgame. Nature moves first determining the type of military leader, “greedy” or “munificent”. The constituent public,  $J$ , chooses next with incomplete information regarding type. The agent,  $j$ , having played the bargaining subgame described above, then decides how big a share of the negotiated bargain,  $x$ , to allocate to the constituent public. Both  $q$  and  $x$  are bounded between one and zero, such that  $0 < q < 1$  and  $0 < x < 1$ . Payoffs to the principal are determined by multiplying  $q$  and  $x$ , the respective share of the negotiated settlement and the share given to the principal. The agent’s payoff is determined by multiplying  $q$  and  $(1-x)$ . Munificent leaders receive a fixed payoff,  $a$ , which is greater than 1. This fixed payoff is inherently greater than any value of  $1-x$  and therefore insures that a munificent leader will allocate a greater share of  $x$  to the constituent public than he would otherwise.

For ease of explication, we shall begin our analysis of the game by examining the equilibrium conditions of the adverse selection subgame for a complete information version of the game. See figure 2, which presents the game with numerical payoffs under conditions of relatively similar bargaining power – thus the  $q$ ’s are not too dissimilar. First for purposes of explication, we assume  $J$  knows  $j$ ’s type. Employing backwards induction, we can identify the subgame perfect equilibria (SPE) for the game. Begin with the upper subgame, a “greedy” military leader will choose to give a low portion  $x$ ,  $1/10$ , to the constituent public rather than a high  $x$  of  $9/10$ . If we look at the bottom subgame, played by munificent agents, a military leader will choose generously to allocate a high  $x$ ,  $9/10$ , to his constituency, and keeping  $1-x$ ,  $1/10$  for himself but earning a popularity reward of  $a=1$ , such that he earns the payoff  $(1-x)+a$  or  $11/10$ . Under conditions of perfect information, looking forward and reasoning back, the principal will choose political leaders when the type is “greedy” and will choose a military leader when the type is “munificent”. The SPE equilibria are {greedy: politician, low} and {munificent: military, high}.

The game becomes more interesting and more relevant for understanding the problems of adverse selection in peace processes, when the principal does not know the agent's type. Under such conditions the constituency must choose between a military and political leader without knowing the true type of the military leader. We intentionally set the differences between the sizes of the respective  $q$ 's relatively small (such that military leaders can bargain for a 50-50 solution and political leaders only for 40-60). We continue to refer to Figure 2 with the numerical payoffs. We can determine the Bayesian Perfect Equilibria for this game. Given the numerical payoffs presented in Figure 2, the critical belief about the value of  $\theta$  can be determined. The principal's expected utility calculation of choosing a politician will be  $E_J(\text{politician}) = (4/10) \cdot (9/10) = 36/100$ . The expected utility for selecting a military leader is:  $E_J(\text{military leader}) = \theta \cdot (5/10) \cdot (9/10) + (1-\theta) \cdot (5/10) \cdot (1/10)$ . Setting these two terms equal to one another, we can calculate the critical level of  $\theta$ , such that  $E_J(\text{politician}) = E_J(\text{military leader})$ . Thereby plugging in the numerical values of Figure 2, we calculate that  $36/100 = \theta \cdot (5/10) \cdot (9/10) + (1-\theta) \cdot (5/10) \cdot (1/10)$ . In this example, the critical value of  $\theta$  is  $9/40$  or 22.5%.

Beliefs about  $\theta$  become critical to the principal's choice. With these payoffs, if the constituent public believes that there is less than a 22.5% chance that Nature has made the agent greedy, they will choose a military leader. Given this critical value, we find two Bayesian Perfect Equilibria, which correspond with the two SPE for the complete information version of the game. Equilibria:

Case 1: *{political leader, (low x, high x)}*. This equilibrium occurs when J believes that  $\theta < 9/40$ .

Case 2: *{military leader, (low x, high x)}*. This equilibrium occurs when J believes that  $\theta > 9/40$ .

In both cases, beliefs determine J's choice, but the actual move by Nature is what determines j's choice. Greedy agents will allocate little to the principal and munificent agents will give much more. If the constituent public believes that there is less than a  $9/40^{\text{th}}$  chance that the agent is munificent, as in case 1, the principal will play it safe and choose a political leader to conduct the negotiations. If the constituent public believes that the chance that the leader is munificent is greater than 9 in 40, the principal will select a military leader as their representative. In other words, given these payoffs, the constituent public will rarely choose a political leader and will most often place their stock in a military leader who is able to negotiate a better bargain, even though it may mean that the agent is greedy.

If the bargaining advantage of the military leader relative to the politician increases, the critical threshold for  $\theta$  will change. In Figure 3, we have increased the difference in  $q$  between what a politician can gain through negotiations with the government and what a military leader can obtain. Instead of gaining a  $q$  of 5/10s as in Figure 2, in this example (Figure 3), military leaders earn 8/10s against politicians 4/10s. In this case the critical value of  $\theta$  is 9/16 or 0.5625. This means that even when  $J$ , the complicit public, believes that the likelihood that a military leader is greedy about 56% of the time, they will still choose a military leader over the more constrained and less greedy politician.

If the disparity in bargaining power is increased as in Figure 4, such that politicians are able to obtain a  $q$  of 2/10s against 8/10s for military leaders, the critical value of  $\theta$  is 27/32 or 0.84375. In other words, under conditions of extremely different bargaining power, (such as a 4 to 1 difference), a complicit public will choose a military leader over a politician even if they believe the likelihood of the military leader being greedy is almost 85%. Several features of this game are worth emphasizing. First is the principal's ( $J$ 's) dilemma. They have a choice between a military leader, whom they cannot control but who possesses the inherent advantage of being able to negotiate a better bargain, and a politician, who has a weaker bargaining position but can be controlled. By selecting a military leader as their agent they can maximize the total share ( $q$ ) for entire group. The problem is that they do not know whether the military leader is greedy or munificent. Greedy leaders will negotiate a bargain that is good for them but not necessarily good for their people. Munificent leaders essentially mean that the principal can avoid agency losses as the interests of agent coincide with the principal's.

The problem is that the principal does not know the type of military leader they are selecting. This is the essence of the adverse selection problem – the accountability of  $j$  to  $J$  with incomplete information. The dilemma for the principal is whether to support the political leader of the movement or the military leader. Greedy military leaders will incur tremendous agency losses – shaped by the size of  $x$  (the share given to  $J$ ). Greedy politicians in contrast can be constrained. But politicians, even munificent ones, lack the bargaining strength of military leaders.

The problem spelled out here also highlights just one of the problems of post-conflict democratization – indeed the path to peace is treacherous for democratization. The selection of military leaders is all too common in the negotiation of peace. Rather than working to support the party structure of the rebel movement and institutions conducive to

democratization, the rebel constituency opts for a better bargain out of the peace process and will tend to select a military leader.

### **The Adverse Selection Model of Peace Agreements with a Third Party**

Third parties, such as international organizations or intervening powers, can influence the Adverse Selection Model of Peace Agreements in several ways. First they can boost  $q$ , tying aid to conditions of agency, making it easier to get to acceptable peace bargain for all parties by expanding the size of the pie being divided. By providing conditional aid, thereby enlarging the size of the pie being divided, they can create an incentive for the principal to select a politician over a military leader (as long as the amount of aid exceeds the bargaining advantage inherent to military leaders). Such aid packages are increasingly evident when the international community is involved in the peace-building process.

Another option would be to grant monopoly rights only to politicians. In other words, the third party would only recognize a negotiator with civilian credentials. The problem with this option is that invites spoilers to ignite armed conflict. Indeed, it would be easy to exploit such a externally imposed solution.

A third option would be to guarantee security with troops on the ground. This is the essential element of Walter's argument (2002, 2009). The success of this policy depends largely on whether the third party can establish an overwhelming security force on the ground. If the third party,  $t$ , can do this, they can fundamentally alter the bargaining subgame, essentially creating a corner solution similar to the one described earlier, whereby the asymmetry between group  $t$  and  $j$  or  $i$  is much greater, such that  $F_t > F_j$ , group  $t$  may be able to expend more resources on both fighting and productive output than group  $j$ , so that the latter group has no prospect of winning a military contest. Under such conditions,  $r_j$  will serve as a constraint on group  $j$ 's ability to fight. Since  $F_j$  cannot exceed  $r_j$ , when  $F_j = r_j$ , fighting effort consumes all resources. This is a corner solution, in which the rebels cannot win militarily regardless of their choice of leader. The prospects of an *ex ante* guaranteed piece of the political pie in contrast to the certainty of losing an armed contest will then certainly look attractive.

The prospects of a third party guarantor of peace can be seen through the examples of Sierra Leone and Afghanistan. The British intervened in Sierra Leone and the U.S. in Liberia with an overwhelming military capability. Neither the government nor the rebel forces were willing or able to challenge the security guarantee of the intervening third party. In

Afghanistan, on the other hand, the NATO coalition has so far been unable to commit a preponderant military capability to induce such extreme asymmetry. Instead, the US and its NATO allies find themselves fighting an asymmetric guerrilla war. At this writing we do not know the outcome of the war in Afghanistan, but if there is a negotiated settlement, military leaders of the Taliban are most likely to be sitting at the negotiating table and presumably able to drive a hard bargain.

## **Discussion**

Our analysis features three parameters: type (greedy or munificent leaders), relative bargaining power (military vs. partisan political leaders), and institutional constraints. Bargaining power and institutional constraints play against one another. Military leaders exhibit an inherent advantage over non-military leaders engaged in negotiations due to their ability to credibly threaten civil war. Partisan politicians being the product of a political party are more often constrained than those who lead narrowly based organizations. A political party may be extremely corrupt, but ultimately resources will have to flow to its constituency; otherwise, the party will lose support. The leader of a military organization need not worry about such niceties, especially in a war environment, where a complicit public is dependent on the war lord to provide security. Bargaining strength affects the portion of the pie that a leader can obtain through negotiation,  $q$ . We model bargaining strength through the use of a contest success function model. Institutional constraints affect how the rewards from the negotiated settlement are distributed. The portion,  $x$ , distributed to the public may be tiny or large. The role of institutional constraints is modeled in a nested extensive form game. Our analysis demonstrates how these two parameters can vary with respect to one another and how this affects the decisions of a complicit public as to whether they support a military or a partisan political leader.

The type of leader matters too. Unconstrained leaders are on occasion munificent. George Washington, the chief General of the American War of Independence and first President of the USA, refused extra power and resources that the public was willing to grant him. The problem is that it is often difficult for the public to know whether an unconstrained leader is munificent or greedy. Our game models this choice as an incomplete information problem. What we find is that there is a clear adverse selection problem at work, which explains why greedy military leaders are chosen over more constrained political party leaders. All too often a pernicious equilibrium supporting nasty war lords and persistent armed conflict can be sustained as witnessed for fourteen years in Liberia.

Our analysis, by focusing on these three parameters helps us to improve upon the existing knowledge of institutions conducive to peace-building, specifically by carefully considering the different aspects of power-sharing and their compatibility with other social goals such as democratic accountability and the provision of public goods. The prevention and resolution of civil conflict is therefore a paramount concern among scholars and the policy community alike. It is especially important to understand the challenges faced by societies that are trying to resolve or prevent civil conflict while at the same time building democratic institutions.

Civil peace can be affected through the means by which leaders of critical social groups are selected and screened, and when there is preference divergence and asymmetric information between political candidates and their respective constituents, problems such as adverse selection may arise. Our paper demonstrates how a complicit public would support a bad leader. Adverse selection may occur even before power-sharing institutions have a chance to work when the political regime tends to select politicians who appeal narrowly to sectional interests or whose main credentials are their military capabilities. This bias may even be built into power-sharing institutions to accommodate those potential spoilers who can most easily threaten the peace. For peace builders representing the international community, such politicians may provide greater security that those groups with the clearest potential for violence have been included. But in the long run, the political leaders with the greatest propensity for armed violence may be the least likely to foster political integration and peace.

Thus, peace-building requires the selection of political leaders who are able and willing to build peace and produce social goods for their respective constituents. Alas, such leaders will not necessarily prevail if the groups they represent are given a hand in their selection. Paradoxically and cruelly, as long as the resort to armed violence is feasible, democracy may even exacerbate the tendency for minorities at risk to turn to leaders with military credentials, even when such leaders are likely to be selfish oppressors.

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Figure 1. The Adverse Selection Sub-Game (Stages 1 and 2)

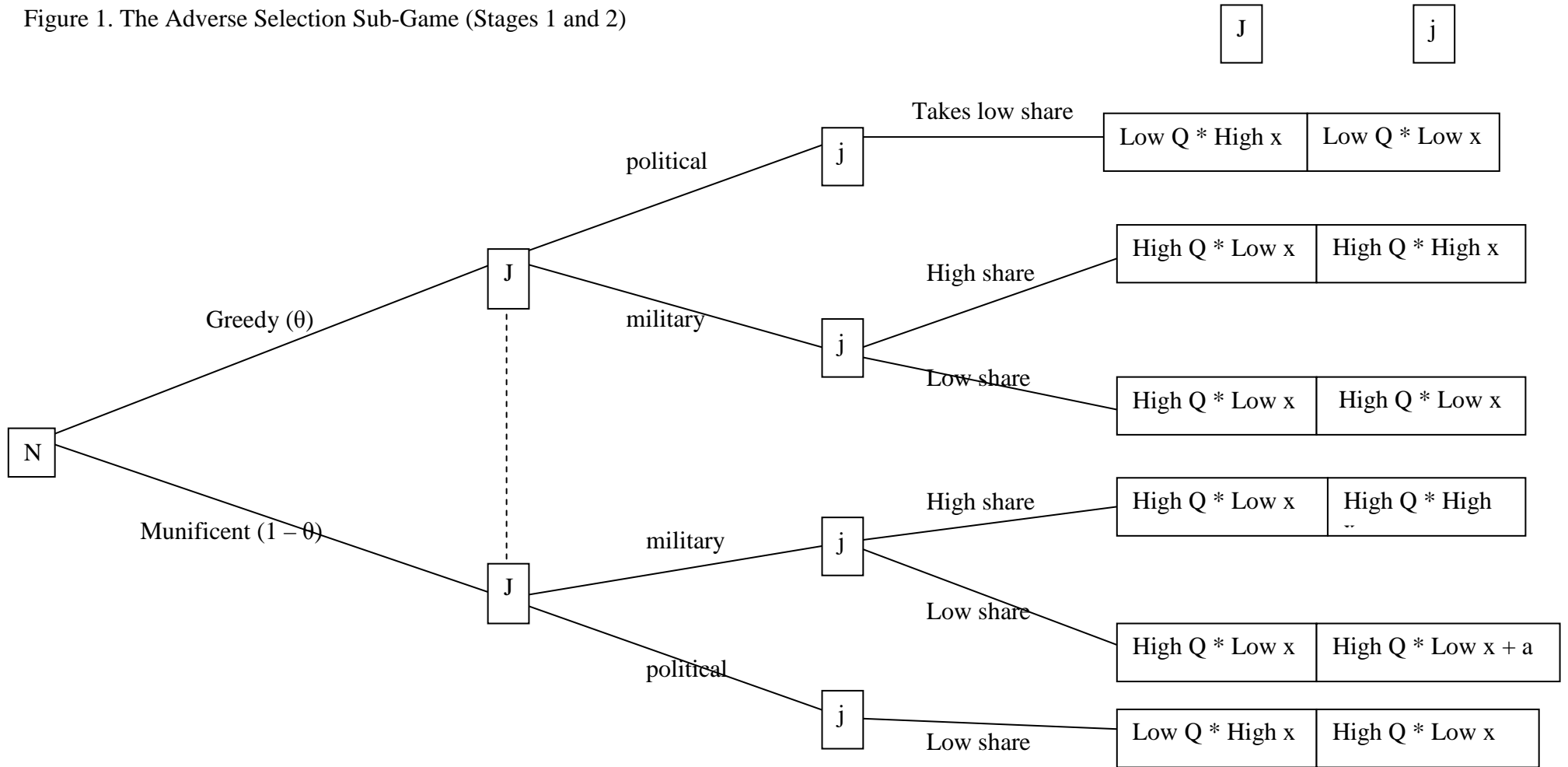


Figure 2. The Adverse Selection Sub-Game (Stages 1 and 2) with numerical payoffs, showing relatively similar bargaining power

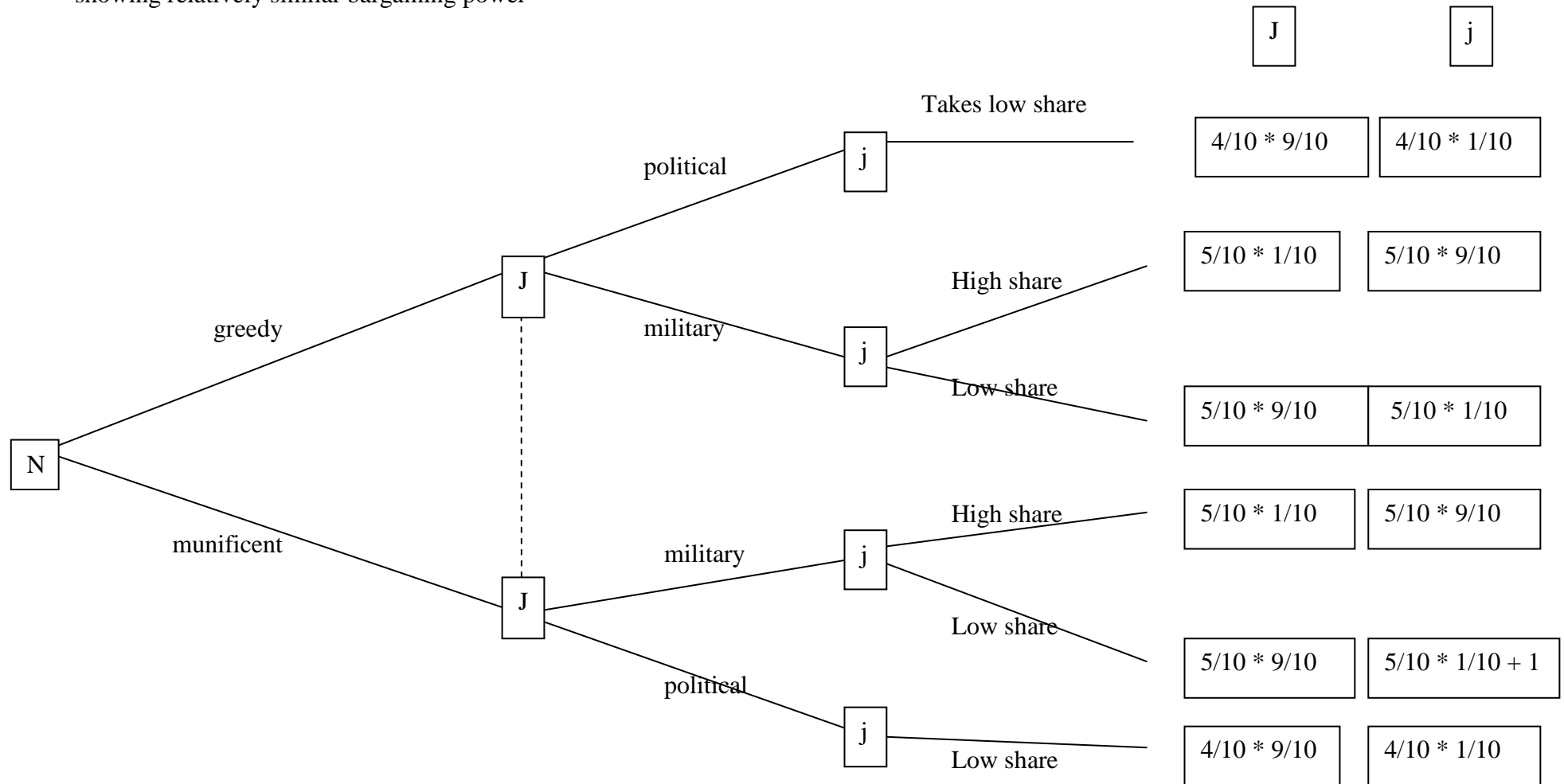


Figure 3. The Adverse Selection Sub-Game (Stages 1 and 2) with numerical payoffs showing significant differences in bargaining power

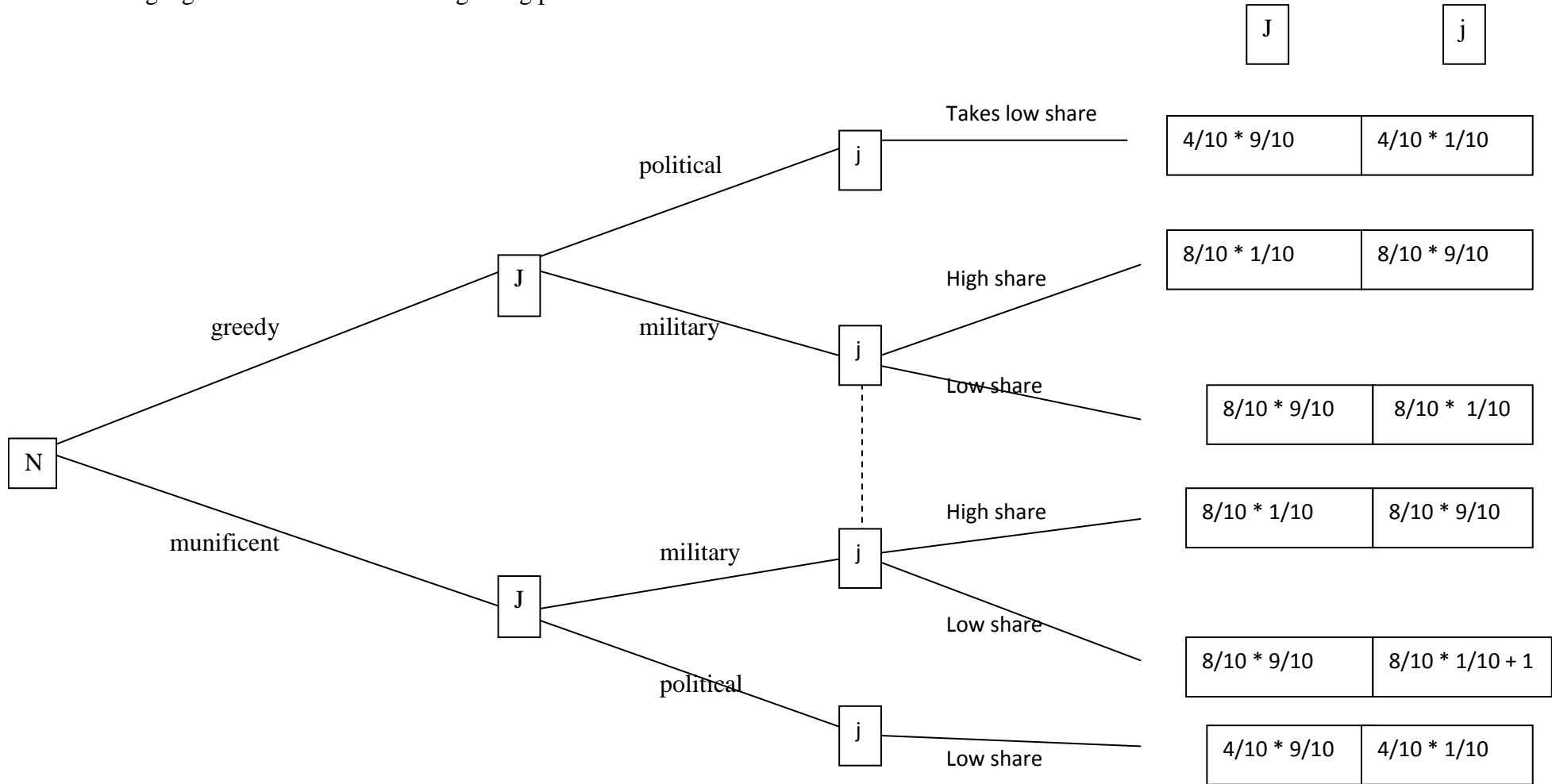


Figure 4. The Adverse Selection Sub-Game (Stages 1 and 2) with numerical payoffs, showing extremely different bargaining power

