Volunteer Militaries, The Draft, and Support for War

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Abstract

This paper models how a nation’s military manpower system affects the decision to go to war. Manpower systems differ primarily in how they distribute costs: the volunteer system shares the war’s manpower costs broadly, while the draft forces a subset of the population to bear a disproportionate share of the load. This difference affects an office- and policy-motivated politician’s decision to go to war. The draft induces pro-war policymakers to pursue more wars than the volunteer military does, while the volunteer system induces anti-war policymakers to pursue more wars than the draft does. The manpower systems cannot be generically ranked by efficiency, because each makes errors the other avoids, but the volunteer system induces selection of more efficient wars for a large class of plausible preference distributions.

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1 Introduction

The presence and extent of military conscription have varied widely across nations and over time. Within the United States, the military moved from localized levies to the first national draft during the civil war, the introduction of selective service during the World Wars, and the advent of the all-volunteer force in the aftermath of Vietnam.\(^1\) Other countries strengthened and weakened conscription provisions over time.\(^2\) There remains substantial variation in the use of conscription, with nearly half the countries in the world with a military using some degree of conscription as a part of their military manpower policy (CSUCS, 2008).

Experimentation with different manpower policies continues today. Over the past three decades, many nations have either implemented or considered substantial changes to their military manpower systems. Several European countries abolished long-standing conscription programs, including Belgium, Czech Republic, France, Hungary, Italy, Portugal, and Spain. Several countries instituted new conscription systems, including Malaysia, Mozambique, and Zimbabwe, and others considered reviving old systems. U.S. Congressman Charles Rangel recently called for reinstating the draft.\(^3\) Similar calls have gone out in Britain, South Africa, and Australia over the past decade.\(^4\) This paper provides a framework for evaluating the positive and normative effects of these proposals.

One aspect of manpower policy that has received little attention is the manpower system’s effect on the nation’s propensity to go to war. Congressman Rangel justified his call for the draft’s reinstatement by arguing that “this President and this Administration would never have invaded Iraq...if indeed we had a draft and members of Congress and the Administration thought that their kids from their communities would be placed in harm’s way.” All research on the welfare effects of conscription policy holds fixed the extent of warfare (See Warner and Asch (2001) for an overview, and recent work by Ng (2008) and Asch et al. (2007)), but if the military recruitment policy affects the nation’s propensity to go to war, it is important to take this effect into account. For example, if the volunteer military reduces the cost of fighting a given war, but raises the probability of fighting inefficient wars, the net welfare consequence might be negative.

The proposition that the manpower system might affect the propensity of a nation to fight has a long tradition dating at least to Kant (1795), who thought professional militaries were more likely to go to war than militias. When considering the adoption of the All-Volunteer armed force in the U.S., the Gates Commission discussed its effect on the propensity to fight, concluding “a decision to use the all-volunteer force will be made according to the same criteria as the decision to use a mixed force of conscripts and volunteers...”(Gates, 1970, p.155). The only formal treatment of the issue in the literature is Wagner (1972), who modeled the effect of conscription on the size of the military and the propensity to go to war. Conscripted armies lead to war, in Wagner’s model, because the costs are borne so heavily by a small number of people, while the median voter who drives policy is unlikely to be affected. Wagner’s intuition remains in my model, but there is a countervailing force as the volunteer military increases support among those who are willing to pay for the war but are

\(^1\)For a review of the U.S.’s recent history with various military manpower systems, see Rostker (2006) and the helpful bibliography by Anderson and Bloom (1976).
\(^2\)For an overview of the time-line of conscription in Europe, see Joenniemi, ed (2006).
\(^3\)On CBS’s Face The Nation, November 19, 2006.
\(^4\)Britain - “Bring Back Conscription (even for me)” The Independent 02/01/07, South Africa- “Conscription May Return to Boost Army Numbers” Independent Online 09/18/00 , Australia “Conscription Calls Shot Down”, The Age 05/19/03.
not willing to fight themselves (due to high opportunity costs). The idea that the distribution of costs can affect support for war is not new (Jackson and Morelli, 2007), but this is the first paper to evaluate the way in which the manpower system mediates this distribution and thereby alters the level of support.\(^5\)

Empirical research has found mixed effects of conscription policy on a nation’s propensity to go to war. Using cross-sectional analysis, White (1989) shows that countries at war are more likely to have conscript armies, while Ross (1994) finds no relationship. More recent work has taken a panel-data approach, concentrating on conscription and conflict at the dyadic (country-pair) level. Choi and James (2003), using panel data over the past century, find conscription to be positively associated with involvement in militarized interstate disputes.\(^6\) Using a wider and shorter panel, however, Choi and James (2008) find that conscription is negatively associated with war onset.

In this paper, I explain these mixed findings with a simple model in which each citizen has a payoff from the country going to war and an additional opportunity cost if he has to personally fight, and war policy is chosen by a policy- and office-motivated policymaker. The costs of manpower are distributed very differently under a draft than under a volunteer military, so instituting the draft can either increase or decrease support for war, depending on how citizens are arrayed in the payoff/cost space. In particular, which system leads to more support for war turns on the size of two groups. Group 1 consists of citizens with small benefits of war. The volunteer military has a higher wage bill than does the draft, so citizens with only small benefits from war are unwilling to support a war that would require them to pay for a volunteer military, but they support war under the draft, as long as they do not have to personally fight. If there are a lot of citizens in Group 1, support for war is higher under the draft than under the volunteer military. Group 2 consists of citizens with moderate benefits and large idiosyncratic costs of fighting. They are willing to pay a volunteer to go, but do not support the war if drafted. If there are a lot of citizens in Group 2, support for war is higher under the volunteer military than under the draft. There will usually be people in both groups, so the relative size of these groups determines which system leads to more support.

If we further make reasonable assumptions about the distribution of payoffs (single-peaked), I show that Group 1 citizens are relatively numerous when average benefits are low and Group 2 citizens are relatively numerous when average benefits are high. Overall support for war under either system increases in average benefits. These results together imply that the volunteer military leads to more support than the draft when support under both systems is high and less support than the draft does when support under both systems is low. As a corollary, the volunteer military leads to more war than the draft when anti-war policymaker controls war policy, since the marginal war with an anti-war policymaker is one that the citizens strongly support and they support it even more strongly under the volunteer military. Similarly, the volunteer military leads to fewer wars than the draft when a pro-war policymaker controls policy. These contrasts are particularly strong when changes in the citizens’ support for war has relatively large effects on the politician’s hold on

\(^5\)Although not primarily concerned with support for war, Perri (2008) discusses the distributional consequences of conscription in the context of the civil war; the differing distribution of the burden of fighting between the draft and volunteer militaries plays a central role in my explanation of the support differential between these two systems.

\(^6\)Militarized interstate disputes are united historical cases of conflict in which the threat, display or use of military force short of war by one member state is explicitly directed towards the government, official representatives, official forces, property, or territory of another state. Disputes are composed of incidents that range in intensity from threats to use force to actual combat short of war” Jones et al. (1996)
power.

This framework also illuminates the employment systems’ welfare consequences. From a utilitarian perspective, with completely general preference distributions, neither system is unambiguously better. Each system can lead policymakers to undertake wars that are inefficient, in the sense that the total costs outweigh the total benefits, and that the other system avoids, and each system can fail to undertake efficient wars that the other system undertakes. But the two systems are not equally subject to both types of error. For reasonable preference distributions, the volunteer military leads to more support only if war is very efficient, but leads to less support when war is barely efficient. By contrast, the draft is more likely to have a support advantage when war is inefficient, but correctly induces the prosecution of some close calls that the volunteer military leads the policymaker to forgo.

The next section outlines the baseline model and presents results on support for three pure manpower systems: volunteer, a simple draft, and an optimal draft. Section 3 examines efficiency in this setting, and analyzes the various systems from a total-welfare perspective. Section 4 considers a number of extensions to the baseline model, including a partial draft, selective service, systemspecific costs, and endogenous manpower policy. Section 5 briefly concludes.

2 Basic Model with Preferences in Two Dimensions

This section presents a model of support for war under various military manpower systems. First, I outline the players, preferences, and the actions in the political game, which are common across all the manpower systems. I then discuss the particulars of alternative manpower systems. Finally, I compare the level of support induced by these systems and analyze what that implies about the propensity to go to war. I perform this analysis for general preference distributions and a family of truncated normal distributions. Throughout, the extant manpower system is taken as given exogenously.\(^7\)

2.1 Primitives

**Preferences** Consider a country composed of a unit mass of risk-neutral citizens, indexed by \(i\), faced with the opportunity to go to war. Each citizen has three inputs into his preferences. First, if the country fights the war, he receives a private expected benefit \(b_i \in \mathbb{R}\) per period, regardless of whether he personally fights. This expected benefit is net of all costs of war other than those determined by the manpower system and includes an evaluation of the probability of various degrees of success and failure together with the payoff under each outcome. It is also net of the tax cost of providing for draftees, perhaps including a small wage. Finally, this benefit is evaluated with respect to the best option other than war. This option may be simply not engaging with the other country at all, using non-military threats and punishments like trade restrictions, accepting a settlement with the potential opponent, or (in the case of an aggressive opponent) offering generous terms to

\(^7\)For positive analyses of the choice of military manpower systems, see Tollison (1970), Hadass (2004), Mulligan and Shleifer (2005), and Poutvaara and Wagener (2007), although none of these consider the effect of that choice on propensity to go to war.
stave off aggression.\(^8\)

Second, if the citizen personally fights in the war, he pays a cost \(c_i \in \mathbb{R}^+\) per period. Similar to the benefit, this cost includes an evaluation of the probabilities and payoffs of all potential outcomes of fighting, evaluated with respect to the citizen’s best outside option, taking into account whatever minimal wage a draftee would receive.\(^9\)

These costs and benefits are distributed across the population according to some density \(f(c, b)\), that is positive everywhere in the domain, with marginal distributions \(f_c(c)\) and \(f_b(b)\).\(^{10}\) Each of these costs/benefits is measured in dollar terms, and the final input in each citizen’s utility consists of the net money transfer to/from the government and other citizens. This could include a wage, taxes, and any payment received as a draft proxy.

War policy in this country is dictated by an incumbent politician who is both office- and policy-motivated. This politician has full unilateral discretion to declare war, and war may last up to two periods.\(^{11}\) In the base model, I assume that the incumbent policymaker takes the military manpower system as given, but in section 4.4 I consider what changes when he can alter the military manpower system. The incumbent uses his policymaking power to affect his probability of keeping office, on which he places a normalized value of 1, and to institute his policy preferences, modeled as a payoff \(B \in \mathbb{R}\) if the country goes to war in the first period.

**Timing and Political Technology** The politician acts first. If he declares war in the first period, recruitment occurs in accordance with the extant manpower system (outlined below) and the war is prosecuted. Otherwise, no recruitment occurs.

Whether war is declared or not, the incumbent faces a challenger for his office who opposes his war policy, and each citizen decides whether to support the incumbent or the challenger. The incumbent maintains his office with probability \(p(S)\), where \(S\) represents the fraction of the citizenry supporting the incumbent. This probability increases in the level of support. I assume that citizens sincerely represent their preferences over the expected war policy.\(^{12}\)

Whoever wins office enacts war policy in the second period. A continued war uses the recruits

\(^{8}\) It is an open question whether citizens can properly evaluate their personal benefit of big policy changes like the decision to go to war. Berinsky (2009), for example, argues that citizens’ perceptions of the benefits of war are importantly shaped by the society’s elite. I leave aside the question of the origins of these preferences, and assume that the \(b_i\) s in the model reflect the final net result of whatever process leads citizens to make judgments about the benefits of war.

\(^{9}\) The assumption that everyone has a cost of going to war is for simplicity. Allowing for those who enjoy war per-se, relative to their next best option, does not change any of the results, but merely introduces more parameter regions to analyze.

\(^{10}\) The distribution of potential costs and benefits is independent of the underlying manpower system. This assumption is important if you believe that the manpower system in country A may affect the choices made by country B, which could in turn affect the costs and benefits of war for citizens of country A. I ignore these general equilibrium effects, here, but return to this issue in the conclusion. I do this for several reasons. First, we need to know the partial equilibrium effects to calculate the general equilibrium effects. Second, the partial equilibrium effects may be of independent interest, if we want to understand the effect of manpower systems on willingness to fight, all else equal. Third, the general equilibrium effects of a shift in support for war should be in, weakly, the same direction as the partial equilibrium effect. If, for instance, the volunteer military leads to more support for war in country A, it would be very strange for the reaction of country B to overshoot and actually lead to less war. Of course, without a full GE model, I cannot prove this analytically.

\(^{11}\) In reality, the policymaker may have several variants of a given war to choose among, each with its own \(f(c, b)\) distribution and manpower requirement. In that framework, you can think about his choice as between his “best” war option, in terms of support, to the peace option.

\(^{12}\) Sincere voting will always be an equilibrium, and as long as the citizens believe they have an impact on \(S\) it will be the unique equilibrium.
from the first period. War in the second period that follows peace in the first requires recruitment in accordance with the manpower system.

Second-period war policy is mechanical and not explicitly modeled as a choice. I simply assume that a retained incumbent continues his extant policy with a higher probability than the challenger would, and the citizens anticipate this.\textsuperscript{13}

Figure 1 illustrates the timing, where \( I \) represents the move by the incumbent (the choice to go to war or not), \( C \) represents moves by the citizens (employment decisions and support decisions), and \( N \) represents moves by nature (the chance of war continuing next period, which depends on first-period war policy and whether the incumbent is retained).

**Figure 1: Illustration of Timing**

![Timing Diagram](image)

**Military Manpower Systems** War requires the participation of a fraction \( d \) of the citizens. This fraction represents the additional manpower required to fight this particular war, over and above any other soldiers currently employed for national defense or for other conflicts. This assumption is a simplification in at least two ways. First, citizens are equally eligible and able to participate in the military, while the reality of military recruitment suggests the importance of differential ability. I return to these issues briefly in sections 4.2 and 4.3. Second, there is a fixed and known manpower

\textsuperscript{13}I could provide micro-foundations for this assumption in a number of ways. A challenger that simply wants to continue the incumbent’s policy may have little electoral traction. There could be uncertainty among the citizens about the incumbent’s second-period preferences, and in any reasonable signalling game, declaring war will (weakly) signal a more pro-war type while declaring peace signals a more anti-war type. The incumbent could make policy-specific investments that make continuing his policy less costly for him than changing to a new policy. Since the focus here is on support, I leave the exact mechanism for this difference unspecified.
requirement for war, and increasing manpower above this level has no additional benefit. Because my primary concern is the interaction of manpower systems and support for war, I abstract away from these other important effects of military structure.

The most important characteristic of a manpower system in this model is the fraction \( d' \leq d \) of citizens induced to volunteer. A pure volunteer system has \( d' = d \), a pure draft has \( d' = 0 \), and partial draft forms have \( 0 < d' < d \). An additional relevant feature of a draft system is the opportunity to avoid service. Draftees must serve in a simple draft, but can hire proxies in an optimal draft.

The timing of the recruitment process is as follows. First, a bureaucrat sets the per-period wage \( w' \) that is consistent with the manpower system’s recruiting goals.\(^{14}\) Citizens take this wage as given and decide whether to volunteer. Funds to pay the wage bill are collected as a per-period per-capita tax from all citizens. I ignore the deadweight loss associated with taxation by assuming they are lump-sum.\(^{15}\) Tax inefficiency is reintroduced in the extensions below. If the wage is not sufficient to induce the full \( d \) to volunteer, the remaining \( d - d' \) required soldiers are randomly selected from among the non-volunteers. Volunteers and draftees are required to serve (or provide a proxy if allowable) for the duration of the war. If the system allows proxies, they are hired at a per-period market wage \( m \) after draft status is determined, and that wage has to be paid by the hirer for the duration of the war.

To summarize, a war consists of a continuous preference distribution \( f(c, b) \) and a number \( d \in [0, 1] \) representing the fraction of the population required to prosecute the war. A manpower system consists of a fraction \( d' \leq d \) of citizens induced to volunteer, together with a rule allowing or disallowing the hiring of a proxy. There are potentially four stages with real maximizing choices. First, the incumbent politician chooses his war policy. Second, citizens act in the manpower market, if necessary. Third, citizens decide whether to support the incumbent or the challenger. Fourth, citizens act in the second-period manpower market, if war is declared in the second period but not in the first. To solve for the subgame perfect Nash equilibrium (SPNE) in this game, we progress backwards through these choices in each subgame.

Since the incumbent acts first by simply choosing war or peace, and all subsequent maximizing choices are carried out by citizens, there are essentially two subgames to consider, one after war and one after peace. Correctly anticipating the equilibrium in those subgames, the incumbent simply chooses whichever subgame maximizes his payoff. I first analyze the subgame after war and then the subgame after peace, before bringing them together to characterize the incumbent’s optimal strategy completing the overall characterization of the SPNE.

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\(^{14}\) This wage is a premium over whatever minimal wage is paid to draftees. It could take the form of an enlistment bonus or a formal wage differential. Since we are taking the manpower system as given, the policymaker has no opportunity to tinker with this wage. I consider the case of endogenous manpower systems below.

\(^{15}\) The tax consequences are the additional tax burden from the volunteer wage premium. As mentioned above, the cost of the basic support of a draftee is assumed to already be shared equally and therefore swept into the \( b_i \) terms. The additional burden is \( d'w' \) since \( d' \) volunteer soldiers are paid above-draftee wages and the volunteer wage premium is \( w' \).
2.2 Support for Incumbent During War with Pure Manpower Systems

In this section I derive the manpower market equilibrium and support for the incumbent in a subgame in which war was declared, for the three pure manpower systems: volunteer, simple draft, and optimal draft. I consider partial draft systems in section 4.1. Since the payoff of all citizens is normalized to zero in the second period if war is abated, to calculate support for the incumbent it suffices to determine the payoff from war under each manpower system. A citizen supports the incumbent if his payoff is positive, so support for war and support for the incumbent in this subgame are equivalent and will be used interchangeably.

Figure 2 graphically represents the preference space over which the citizens are distributed. Each \((c_i, b_i)\) combination is a point on the plane, and for a given war, we have some distribution of citizens in that plane. The discussion below focuses on which areas of that space contain citizens that serve in the military and which areas contain citizens that support war, as a function of the manpower system.

**Volunteer:** Under a pure volunteer military, the military wage \(w\) is set such that a fraction \(d\) of the citizens volunteer. If a citizen volunteers for the military, he receives \(w\), financed by a lump-sum tax shared equally among all citizens (including himself). To determine support, civilians weigh the tax cost of war \((dw)\) against their benefit, while soldiers also add their profit \((w - c)\) from volunteering. The following Lemma summarizes the manpower market and political support for the incumbent in this subgame under a volunteer military (Proof is trivial and omitted).

**Lemma 1.** Under a pure volunteer system, there is a unique SPNE in the subgame in which war was declared in the first period. In that equilibrium,

- a) The volunteer wage, \(w\), satisfies \(F_c(w) = d\).
- b) Citizen \(i\) volunteers for war if and only if \(w \geq c_i\).
- c) Citizen \(i\) supports the incumbent if and only if \(\max\{b_i - c_i + w(1 - d), b_i - dw\} \geq 0\).

In Figure 2, every citizen to the left of the vertical dashed line \(w\) volunteers to fight. These citizens support the incumbent if \(w(1 - d) + b_i - c_i \geq 0\). Some citizens volunteer, but vote against the incumbent for one of two reasons. The most obvious, depicted in regions G and J of Figure 2, are people with relatively low costs of fighting, per-se, but who bear a large negative benefit of the nation going to war \((b_i < 0)\). A little less intuitive are those in Region H, who get a mild benefit of going to war, but who just barely prefer fighting to staying home \((c_i\) just less than \(w)\). Once they take into account the costs of paying the other soldiers \((dw)\), they prefer to just forgo the war completely. All other volunteers vote for the incumbent. Citizens in regions C and D support the incumbent because they are compensated for fighting. If they were a one-man country, and had to individually bear the costs and the benefits, they would choose not to fight. In contrast, those in region A would fight a one-man war even with no wage (So would some of those in B, but given their high cost of fighting, they do not volunteer here).

In the volunteer military, everyone to the right of the the vertical dashed line at \(c_i = w\) remains a civilian. Just like the volunteers, they are not homogeneous in their support for the war. A civilian supports the war if \(b_i - dw \geq 0\). Citizens in regions B, E, and F vote in favor of the incumbent,
while those in regions I and K vote against him. Citizens in B support the war because they get such a large benefit; in fact, they would be willing to go fight, if they had to, but they do not fight in equilibrium because there are enough others with lower costs. Citizens in E and F support the war because they do not have to fight, but given the reduced costs due to specialization, they are willing to pay the wage of the soldiers. Citizens in I do not get a large enough benefit from the war for the wage costs to be worth it, while those in K do not benefit from the war at all.

To summarize, under the volunteer system, everyone with \( c_i \leq w \) volunteers, and all these volunteers support the war except those in regions G, H, and J. Those with \( c_i > w \) remain civilians, and all the civilians support the war except those in regions I and K. Denote the fraction of citizens who support the incumbent in this subgame as \( S_V = A + B + C + D + E + F \), where the capital letters represent the fraction of citizens in the indicated regions from Figure 2.

**Simple Draft** Under a simple draft system, no one volunteers, and a fraction \( d \) of citizens are randomly assigned to the military and receive a wage normalized to zero.\(^{16}\) Support is completely driven by draftee status and idiosyncratic costs and benefits of war. The following Lemma summarizes the equilibrium in this subgame under a simple draft.

\(^{16}\)The draftee wage is normalized to zero in the sense that I’ve assumed \( c_i \geq 0 \) for everyone, and the cost of paying draftees is swept into the \( b \) terms. If the draftee wage were set above the lowest \( c_i \), but below the volunteer wage, then we would be in what I call a partial draft system. I analyze that case in the extensions below.
Lemma 2. Under a simple draft, there is a unique SPNE in the subgame in which war was declared in the first period. In that equilibrium,

a) A fraction \( d \) of citizens are randomly drafted.

b) Draftee \( i \) supports the incumbent if and only if \( b_i \geq c_i \).

c) Non-draftee \( i \) supports the incumbent if and only if \( b_i \geq 0 \).

Soldiers make up a fraction \( d \) of the citizens in each region of Figure 2. Since they receive no wage, they support the incumbent if and only if \( b_i - c_i \geq 0 \), i.e., they are above the 45-degree dashed line through the origin. As discussed above, only the citizens in regions A and B meet this criterion.

A civilian supports the incumbent if \( b_i \geq 0 \), because there is no wage tax to pay, and he does not have to fight. Civilians make up a fraction \( 1 - d \) of every region of Figure 2, and they support the incumbent if they are in a region above the horizontal solid line (Regions A, B, D, E, F, H, and I).

To summarize, under the simple draft, a fraction \( d \) of citizens in every region is assigned to the military. All citizens in regions A and B support the war, as do the fraction \( 1 - d \) of those in D, E, F, H, and I who were not drafted. Denote the fraction of citizens who support the incumbent in this subgame as \( S_D = A + B + (1 - d)(D + E + F + H + I) \), where the capital letters represent the fraction of citizens in the indicated regions from Figure 2.

Optimal Draft In the spirit of Mulligan (2008), I also consider an optimal draft, in which a fraction \( d \) of the citizens is randomly assigned draftee status, but each draftee can avoid serving for a price. They can hire a proxy to go in their place at the market price. Perri (2008) discusses the role of draft proxies in the U.S. Civil War and shows that this mechanism is equivalent to Mulligan’s if there are no transaction costs of hiring a proxy and if Mulligan’s commutation price is equal to the market price for proxies. After draftee status is assigned, a market arises for draft proxies, and the market price \( m \) is determined so that exactly \( d \) citizens are willing to serve at that price. Draftees who prefer not to serve must pay the proxy price, while non-draftees who want to serve receive it. Lemma 3 describes equilibrium play in the war subgame with an optimal draft.

Lemma 3. Under a pure optimal draft system, there is a unique SPNE in the subgame in which war was declared in the first period. In that equilibrium,

a) The proxy wage, \( m \), satisfies \( F_c(m) = d \).

b) Citizen \( i \) serve as a soldier if and only if \( c_i \leq m \), regardless of initial draft status.

c) Draftee \( i \) supports the incumbent if and only if \( \max\{b_i - m, b_i - c_i\} \geq 0 \).

d) Non-draftee \( i \) supports the incumbent if and only if \( \max\{b_i, b_i + m - c_i\} \geq 0 \).

Under the optimal draft, a fraction \( d \) of citizens are randomly assigned draftee status, and a proxy price \( m \) arises. By the argument following Lemma 1, the price that equates supply and demand in the market for proxies is exactly that which induced \( d \) volunteers (i.e., \( m = w \)).

Soldiers consist of all those with \( c_i \leq m \) (to the left of \( w \) in Figure 2). Draftee soldiers make up a fraction \( d \) of all soldiers and receive no wage, so they support the incumbent if and only if \( b_i - c_i \geq 0 \).
Only citizens in region A meet this criterion. Non-draftee soldiers make up a fraction \((1 - d)\) of all soldiers and receive the proxy price \(m\) if the war continues, so they support the incumbent as long as \(b_i \geq m - c_i\) (regions A, C, D, G, and H).

A civilian’s support for war continuation also depends on his draftee status. Draftees make up a fraction \(d\) of civilians. They have to pay a proxy, so they support the incumbent if and only if \(b_i - m \geq 0\). Citizens in region B and F meet this criterion. Non-draftees make up a fraction \((1 - d)\) of civilians, and they bear no manpower costs of war, so they support the incumbent if and only if \(b_i \geq 0\). Citizens in regions B, E, F, and I meet this criterion.

In summary under the optimal draft, the proxy price equilibrates at \(m = w\) and everyone with \(c_i \leq m\) serves in the military. Everyone in regions A, B, and F supports the incumbent, while only the non-draftee fraction \((1 - d)\) of people in regions C, D, E, G, H, and I support the incumbent, and no one in regions J or K does. Denote the fraction of citizens who support the incumbent in this subgame as \(S_O = A + B + F + (1 - d)(C + D + E + G + H + I)\), where the capital letters represent the fraction of citizens in the indicated regions from Figure 2.

2.3 Support for Incumbent During Peace with Pure Manpower Systems

The subgame after the incumbent chose peace in the first period is slightly different from that after he chose war, since citizens have not participated in the manpower system before making their political choices. Instead, citizens have to look forward to their expected role under war in the given manpower system, since this is exactly the outcome they anticipate to occur with a higher probability under the challenger. Since the payoff in peace is normalized to zero, they will support the incumbent if their expected payoff under war is negative.

Under the volunteer system there is no uncertainty, and citizens can perfectly predict the wage and the tax cost they will bear \((dw)\). This comparison is identical to that in the post-war subgame analyzed above. Under the optimal draft, each citizen can perfectly predict whether he will actually go to war but not whether he will be drafted. He has a probability \(d\) of bearing the full cost of paying the marginal proxy \((w)\). With risk-neutrality, however, this risk is the same as bearing a fraction \(d\) of the cost for certain, so the volunteer military and optimal draft lead to identical support for the incumbent. Under the simple draft, support is driven by a direct comparison of the benefits of war \((b_i)\) and the expected cost, which is simply the probability of being drafted times the cost of serving \((dc_i)\). Since the set of preferences satisfying \(b_i > dc_i\) is a strict subset of those that support the incumbent in Lemma 1, fewer citizens will support the challenger in the peace subgame with a simple draft than would with the other two systems. In summary,

**Lemma 4.** For each manpower system, there is a unique SPNE in the subgame in which war is not declared. Under the volunteer system or optimal draft, support for the incumbent in the peace subgame is \(1 - S_V\) minus the support for the incumbent in the war subgame under the volunteer system, derived in Lemma 1. Under the simple draft, citizens support the challenger if and only if \(b_i > dc_i\), leading to less support than the optimal draft.

Let \(\tilde{S}_j\) represent the support for the incumbent during peace, under manpower system \(j\). The forgoing Lemma says that \(\tilde{S}_D > \tilde{S}_O = S_V = 1 - S_V = G + H + I + J + K\), where the capital letters represent the fraction of citizens in the indicated regions from Figure 2.
2.4 War or Peace with Pure Manpower Systems

Once expected support in each subgame is determined, the incumbent trades off the electoral consequences against his policy preferences when choosing between the War and Peace subgames. In particular, given policy preference $B$ and manpower system $j$, he chooses war if $B + p(S_j) \geq p(\bar{S}_j)$. Our interest is in how the extant manpower system affects this choice. The following proposition summarizes all that can be said about the relationships between manpower systems and the incumbent’s decision to go to war for completely general preference distributions.

**Proposition 1.** For any war, any policy preference $B$, and any manpower system, there is a generally unique SPNE in the full game. For a given war with manpower system $j$, there is a cutoff policy preference, $B^*_j = p(\bar{S}_j) - p(S_j)$, such that the incumbent chooses to fight in the first period if and only if $B \geq B^*_j$. For all wars, $B^*_D > B^*_O$, but there are wars for which $B^*_V > B^*_D$ and wars for which $B^*_O > B^*_V$.

The proof (In Appendix 6.1) considers both war and peace subgames, but for the purposes of exposition, it suffices to concentrate on how support for the incumbent varies among manpower systems in the war subgame. We know from Lemma 4 that support in the peace subgame is the same with the volunteer system as it is with the optimal draft, so the difference in policy cutoffs is driven entirely by differences in support in the war subgame. For the comparison between the volunteer and simple draft systems, any shift in the preference distribution that increases the difference in support after war weakly decreases the difference in support after peace, and vice-versa.

Which manpower system leads to more support for the incumbent in the war subgame depends on how the citizens’ preferences $f(b,c)$ are allocated among the regions in Figure 2. Specifically, every citizen in regions A and B supports the war under all policies, while no citizen in regions J or K does, so a comparison must turn on the other regions.

The analysis of the individual systems indicates that

\[ S_V - S_D = C + d(D + E + F) - (1 - d)(H + I), \]  
\[ S_V - S_O = d(C + D + E) - (1 - d)(G + H + I) \]  
\[ S_O - S_D = dF + (1 - d)(C + G), \]

where the capital letters represent the proportion of the population in each region of Figure 2.

The only unambiguous comparison is between the optimal draft and the simple draft. Since the initial burden of the war is identical under both systems, and the optimal draft allows for an efficient reallocation of the war-fighting responsibility with appropriate compensation, the optimal draft always leads to more support than the simple draft. This support advantage comes from two groups: citizens in F who are willing to pay the full price of the marginal proxy if they are drafted but are not willing to go fight, and citizens in C and G who are willing to support the war if and only if they get to collect the proxy payment.

Support under the volunteer system, as compared to either draft system, depends more particularly on the distribution of benefits and costs in society. If a large share of society consists of those with relatively small benefits of war (regions G, H and I), the draft leads to more support for
war than the volunteer military does. By contrast, if a large share of society consists of those with moderately large benefits of war (Regions C, D, E), the volunteer military leads to more support for war than the draft does.

The key difference between the draft and the volunteer military is the distribution of costs. Under the draft, the manpower costs of war are borne by the small fraction of society who are drafted, while under a volunteer system they are split among all citizens. Citizens with small benefits from war (as in regions H and I) support a war only if they bear none of the manpower costs, so they unanimously oppose the war under the volunteer system. Under the draft, the non-draftee fraction of these citizens bear no manpower costs, so they support the war.

Citizens with modestly large benefits (as in regions C, D, and E), are willing to pay the tax cost of military employment, so they unanimously support the war under the volunteer system. Their benefits are not so large that a draftee is willing to bear the full cost himself (even if he can efficiently hire someone as a proxy), so only the non-draftee fraction support the war under the draft.17

Differences among these manpower systems in support for the incumbent in the war subgame affect how strongly pro-war (or weakly anti-war) an incumbent policymaker needs to be to choose war under each system. If the volunteer system has a support advantage over the optimal draft in the war subgame, for example, then $B^*_V < B^*_O$, so a bigger range of policymakers would go to war under the volunteer military than the draft. Of course, a larger support differential leads to a bigger gap in the preference cutoffs.

The policymaker’s war policy is also affected by the manner in which citizen support affects his probability of maintaining his position. For a given distribution of citizen preferences, the policymaker’s preference cutoffs move toward zero as $p()$ becomes flatter and increase (in absolute value) as $p()$ becomes steeper. At one extreme, when $p()$ is constant, so the probability of the incumbent retaining office is independent of support, the incumbent goes to war if and only if $B \geq 0$ regardless of the manpower system. At the other extreme, where the incumbent will lose office for sure if he goes against the preferences of the majority and keep office for sure if he chooses the support-maximizing policy, the absolute value of the preference cutoff is 1, since only a policymaker who cares more about policy than maintaining office goes against the citizens’ preferences. Since the difference in support between manpower systems affects policymaking by altering retention probabilities, the gap between the cutoffs shrinks as $p()$ gets flatter and expands as it gets steeper (until they bump into the $|B^*_j| = 1$ bound).

The shape of the $p()$ function may vary with characteristics of the war or the polity. For example, if less important wars do not play a central role in determining overall support for the incumbent, then $p()$ will be relatively flat for those wars. Similarly, it may be flat in a non-democratic polity or in one where the incumbent is strongly advantaged or protected from popular sentiment. A flat $p()$ implies that the politician’s preferences play a greater role in determining the policy, since even

17In the case of the optimal draft versus the volunteer military, this general comparison is true both for population as a whole and for the military and civilian sub-populations. Support comparison in the military sub-population turns on the comparison of volunteer-advantaged regions C and D versus the draft-advantaged regions G and H. Support comparison in the civilian sub-population turns on the E versus I. For the simple draft, things are a little more complicated, since the military will be drawn from all the regions. This fact means that a lot of people in region $B$ can lead to a lot of pro-war soldiers under the simple draft who never serve under either efficient system. One could imagine modeling the policymaker as caring differentially about support among the military and civilian sub-populations, but since for the most direct comparison (optimal draft versus volunteer) they move in very similar ways, I have taken the simpler route of simply giving him preferences for overall support.
relatively moderate politicians may institute their preferences over the wishes of the citizens. Of course, whether a flat \( p() \) leads to more or less war depends on the policymaker’s war policy bias.

In the next sub-section I explore the implications of these differences in the context of the family of bivariate normal preference distributions.

### 2.5 Example with Truncated Bivariate Normal

To illustrate the effects outlined above, I assume in this section that \( f(c, b) \) is bivariate normal, with mean/mode parameters \( \mu_c \) and \( \mu_b \) and variance parameters \( \sigma_c = \sigma_b = 1 \), but with costs truncated below at \( c = 0 \). I assume, further, that \( b \) and \( c \) are uncorrelated and 10 percent of the citizens are required to fight the war. Given these specific assumptions about the distribution of preferences, using Lemmas 1-4 one can numerically calculate the equilibrium wages and exact level of support under each manpower system.\(^{18}\)

Figure 3 represents the percentage-point difference in support for the incumbent after war is declared between the volunteer manpower system and the optimal draft, \( 100 \ast (S_V - S_O) \), as a function of the modal benefit (\( \mu_b \)) and cost (\( \mu_c \)) parameters.\(^{19}\) Each point on this figure represents a different distribution of preferences, and the shading indicates the difference between the support an incumbent who chose war receives under the volunteer system and the support he receives for choosing war with the optimal draft system. The grey area represents parameter configurations for which the level of support under the volunteer military and optimal draft are within 1 percentage point of each other. The cool colors on the bottom half represent parameter combinations for which the optimal draft leads to more support than the volunteer military, while the hot colors at the top represent combinations for which the volunteer military leads to more support than the optimal draft. The diagonal lines labeled “V-Efficient” and “D-Efficient” relate to the efficiency of war and will be discussed in the next section.

To take a specific example, consider the point \(( \mu_c = 4.5, \mu_b = 2)\), indicated by the black dot. This point represents a particular war, for which the costs and benefits are distributed as bivariate truncated normal with modal cost 4.5 and modal benefit 2. For this preference distribution, the volunteer military leads to more support for the incumbent in the war subgame than the optimal draft does, by between 5 and 7 percentage points. To translate this into policymaker preference cutoffs assume \( p(S) = S \), then \( B^*_V \approx B^*_O - 0.06 \), since a policymaker would have to be even more anti-war to choose peace under the volunteer system with its high level of support for war continuation.

Consider what happens to the support differential as the modal cost changes (moving along the x-axis in Figure 3). When the average manpower cost of fighting is small, the equilibrium wage/proxy payment is small, so the swing region made up of areas C+D+E and G+H+I in Figure 2 is also small. Intuitively, when the manpower cost of fighting is small, bearing a portion of that cost (as under the volunteer system) and bearing the whole cost (as under the draft) are not that different, so there are not large differences in support between the two systems.

As \( \mu_c \) grows, the system used begins to affect support for war more significantly. The draft leads to greater support when the modal benefit is small, while the volunteer military leads to greater

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\(^{18}\) Explicit numerical calculations available from author by request.

\(^{19}\) The cost parameter is no longer the mean, once the distribution has been truncated, but it remains the mode, so I refer to both as such.
Figure 3: Percentage point difference in support between Volunteer and Optimal Draft, $100 \times (S_V - S_O)$, with bivariate normally distributed costs and benefits, truncated below at $c = 0$. Each point is a different distribution with modal cost $\mu_c$ and modal benefit $\mu_b$. At all points, $\rho = 0$, $d = 0.1$, and $\sigma_c = \sigma_b = 1$.

Support when the modal benefit is large. For symmetric distributions like the normal, this means that the draft leads to more support when the populace is nearly evenly divided or the war has only minority support, since in these circumstances there are relatively many citizens with small benefits of war who are unwilling to pay volunteers but who support the war under draft if they are not drafted. The volunteer military, by contrast, leads to more support when the populace overwhelmingly benefits from war, since in these circumstances there are relatively many citizens who have a big enough benefit to be willing pay volunteers but high enough costs to be anti-war if they are drafted.

Figure 4 presents the support for continuing war under these two systems for various modal benefits, when $\mu_c = 4.5$. Each $\mu_b$ represents a different distribution of benefits. Support increases in $\mu_b$ for both systems, but it increases more quickly under the draft for low benefits and more quickly under the volunteer system for high benefits, only catching up at $\mu_b \approx 1$, where support under both system is about 80%.
To relate these findings back to the policymaker preference cutoff, consider the case of a relatively unpopular war, so support for the incumbent in the peace subgame is greater than support in the war subgame. For these citizen preferences, all the preference cutoffs are positive ($B^*_j > 0$), since only a pro-war incumbent declares war over the preferences of the citizens. The analysis in this section shows that $0 < B^*_O < B^*_V$, at least for the class of truncated normal preference distributions. Since the support for war is even lower under the volunteer military than the draft, an even more pro-war policymaker is required to lead to war. Similarly, for a very popular war we expect $B^*_V < B^*_O < 0$, and one must be extremely anti-war to choose peace under the volunteer system.

The effect of the manpower system on war depends on the underlying pro-/anti-war tendency of the policymaker. Marginal wars receive more support under the draft than they receive under the volunteer system. So a pro-war policymaker, since he requires a relatively low level of support to fight, prosecutes wars under the draft that he forgoes under the volunteer military. In contrast, wars with high overall levels of support receive even higher support under the volunteer system than they do under the draft. This means that an anti-war policymaker feels obliged due to political pressures to prosecute some wars under the volunteer military that he avoids under the draft. Put another way, a more extreme policy preference is required to go against the will of the people under the volunteer military than is required to do so under the draft. This interaction has never been formally explored in the empirical literature.

A related prediction concerns the degree to which support for war determines re-election. For
small-scale wars or non-democratic polities, \( p(S) \) may increase more slowly. A “flat” \( p(S) \) means that a pro-war policymaker suffers less for pursuing an unpopular war, so he will be more likely to pursue it. Put another way, a more extreme policy preference is required to go against the will under the people if \( p() \) is steeper.

All of the numerical results in this section were calculated for a family of truncated-normal preference distributions. Many of the qualitative features, such as the support advantage of the volunteer military for popular wars and the support-advantage of the draft for unpopular wars, persist for generic single-peaked preference distributions. The details, for interested readers, are included in Appendix 6.2.

### 3 Welfare Comparisons: Efficient wars and prosecuting wars efficiently

The foregoing sections illustrate the problematic relationship between military manpower systems, support for war, and war prosecution. No pure system dominates generically, in terms of inducing support for war. But perhaps the unconditional question of support is less important than whether the systems lead to support at the “right” time, i.e., when war is efficient. This section investigates the efficient selection and prosecution of war.

**Definition 1.** Let \( p_j(b,c) \) represent the probability that a citizen with preferences \((b,c)\) serves in the military, under manpower system \( j \in \{\text{Volunteer, Draft, Optimal Draft}\} \). A given war is \( j \)-efficient if

\[
\int b f(b,c) \, db \, dc \geq \int c f(b,c) p_j(b,c) \, db \, dc.
\]

Since the same citizens serve in the military under the volunteer system and the optimal draft, a war is V-efficient if and only if it is O-Efficient. Since the citizens with the lowest cost of fighting select into the under these two systems, a war is V-Efficient (and O-Efficient) if it is \( j \)-efficient under any manpower system, \( j \), including the simple draft and any partial draft system.

#### 3.1 Efficient war and pure manpower systems

The results on efficient war prosecution mirror those on support. In general, neither manpower system dominates the other in selecting efficient wars. The following proposition summarizes the welfare relationships among the manpower systems.

**Proposition 2.**  
\( a) \) There are wars for which \( B_D^* > B_O^* > B_V^* \) that are D-Efficient and other such wars that are not V-Efficient.

\( b) \) There are wars for which \( B_V^* > B_D^* > B_O^* \) that are D-Efficient and other such wars that are not V-Efficient.

A couple of examples suffice to prove the above proposition. Consider a war with a simple distribution of preferences consisting of three mass points with masses \( \alpha, \beta, \) and \( \gamma \), where \( \alpha + \beta + \gamma = 1 \) and \( \alpha = d \). These masses have associated benefits and costs \((b_\alpha, c_\alpha), (b_\beta, c_\beta), \) and \((b_\gamma, c_\gamma)\).

First, let \( \alpha = d = 1/3, \beta = 1/4, \gamma = 5/12, b_\alpha = 2, b_\beta = 20, b_\gamma = -2, c_\alpha = 3, c_\beta = 15, c_\gamma = 4. \) Under the draft, the people in \( \beta \) support war whether drafted or not, those in \( \alpha \) support war only
if not drafted, and those in $\gamma$ always oppose war. Total support under the draft is $\beta + (1-d)\alpha = 1/4 + 2/9 = 17/36$. Under the volunteer system, the wage is 3, inducing the people in $\alpha$ to volunteer. They all support the war, as do the people in $\beta$, so total support under the volunteer system is $\beta + \alpha = 1/4 + 1/3 = 21/36$.

Given these two level of support, for this parameter distribution, $B^*_{O} > B^*_{V}$. This is a D-Efficient war, since the net benefit is $1/3*2 + 1/4*20 + 5/12*(-2) = 4$ and the net cost under the draft is $1/3*(1/3*3 + 1/3*15 + 5/12*4) = 2.14$. But note that support under both regimes is independent of $b_\gamma$, as long as it remains negative, while the net benefit decreases as $b_\gamma$ decreases, eventually going negative. So, if $b_\gamma$ is sufficiently negative this war is not V-Efficient.

Consider an alternative configuration: $\alpha = d = \beta = \gamma = 1/3$, $b_\alpha = 1$, $b_\beta = 12$, $b_\gamma = 1$, $c_\alpha = 6$, $c_\beta = 15$, $c_\gamma = 9$. Under the draft, everyone supports the war if and only if they are not drafted, so total support is $(1-d) = 2/3$. Under the volunteer military, the wage is set at 6 to induce the people in $\alpha$ to volunteer, but once they take into account the tax cost (-2), they oppose the war, as do those in $\gamma$, so total support is $\beta = 1/3$. Given these support levels, $B^*_{V} > B^*_{D}$. This is a D-Efficient war, since the net benefit is $1/3*(1 + 1 + 12) = 14/3$ and the net cost under the draft is $1/3*(1/3*6 + 1/3*9 + 1/3*15) = 10/3$. Further, support under both regimes is independent of $b_\beta$, as long as it remains above $dc_\alpha = 2$ and below $c_\beta$, while the net benefit decreases as $b_\beta$ decreases, eventually passing the net cost. So, if $b_\beta$ is just over 2, the benefit is just over 1.33, while the volunteer cost is 2 and this war is not V-Efficient.

These efficiency results turn on a well-known weakness of voting— the difficulty in expressing the strength of preferences. Under the volunteer military, citizens can only express whether $b_i > dw$ or not. In the optimal draft, citizens can express one of two preferences, depending on whether they are selected. Draftees can indicate whether $b_i > w$ and non-draftees can indicate whether $b_i > 0$. In neither case can they indicate the degree to which they are above or below these thresholds. In the first example, the efficiency of the war is determined by the degree to which someone ($\gamma$) is against the war, even though he is always against it. In the second example, the efficiency of the war is determined by the degree to which someone ($\beta$) is in favor of the war, even though he is always in favor of it. These contrasts can never be expressed under either system, so efficient prosecution turns on the happenstance of the other preferences.

### 3.2 Truncated Normal Example

Return to the example in Figure 3 from section 2.5 in which the citizens’ preferences have some truncated bivariate normal distribution. This figure also represents the efficiency of war prosecution under each employment system, as a function of the modal cost ($\mu_c$) and benefit ($\mu_b$). The top diagonal line, labeled D-Efficient, represents the modal benefit above which war is efficient for all manpower systems. The bottom diagonal line, labeled V-Efficient, represents the modal benefit below which war is inefficient for all manpower systems. The middle region is the area in which war is efficient for the volunteer system or the optimal draft, but inefficient for the simple draft.

This figure reveals that, at least for the set of truncated bivariate normal, the volunteer military leads to more support for war only in regions for which war is efficient. The optimal draft, by contrast, tends to lead to more support in regions where war is inefficient. Loosely speaking, the volunteer military is more subject to type-1 errors, rejecting wars that it should accept, while the draft is more subject to type-2 errors, accepting wars it should reject. A volunteer system makes
good wars look a little better and bad or marginal wars look a little worse, while the draft makes
good wars look a little worse and bad or marginal wars look a little better.

This contrast might have very different implications depending on the war policy preferences
of the incumbent policymaker. If the policymaker is very anti-war, only very efficient wars have
sufficient support to induce him to declare war, and a draft may actually inhibit the selection of
these very efficient wars. For a mildly anti-war policymaker, marginally efficient wars approach
the threshold, so an optimal draft may actually improve efficiency, since it induces the pursuit of
marginally efficient wars. Of course, the very fact that they are marginally efficient implies that this
welfare benefit may be small. Pro-war policymakers have the opposite effect: they may pursue even
more inefficient wars under the draft than they do under the volunteer military, since the draft leads
to more support than the volunteer military at low levels of support. Of course, if the draft is not
actually optimal, the welfare costs of getting the wrong people to fight can outweigh the ability to
pick up the marginally efficient wars.

Before considering extensions, let us return briefly to the point in the introduction regarding
the efficiency of the volunteer military with respect to endogenizing the decision to go to war. At
least in the the context of bivariate normal distributions of preferences, it seems there is no serious
tradeoff. My results suggest that, in addition to selecting those with the lowest costs of service, a
polity with a volunteer military also does a better job of selecting efficient wars to prosecute, with the
exception of perhaps forgoing marginally efficient wars. Obviously, the numerical calculations can
only be accomplished for a given family of preferences distributions, but the more general analysis in
Appendix 6.2 suggest that the intuition behind this result should extend to generic families of single-
peaked preference distributions. By contrast, the examples in Proposition 2 show that preference
clumps may be problematic for this conclusion.

4 Extensions

In this section, I work through the effects of several extensions to the base model. None substantially
alters the support trade-offs outlined in the base model, but they highlight how the specific results
change if we introduce partial drafts, selective service, system-specific costs, or endogenous manpower
policy. They also reveal new results that help illustrate the driving forces in the base model.

4.1 Partial Draft

In reality, pure draft systems are relatively rare. In most cases, the volunteer system and the draft
system exist simultaneously. This section analyzes these partial draft systems.

Under a partial draft system, a wage \(w' < w\) is set by the government and financed by taxation
of all citizens, which leads a fraction \(d' < d\) of the citizens to volunteer. All citizens who do not
volunteer are subject to a draft to fulfill the remaining need, so any non-volunteer is drafted with
probability \(\frac{d' - d}{1 - d'}\). I assume, for this section, that draftees must serve themselves and cannot hire a
proxy.\(^{20}\)

\(^{20}\)A optimal partial draft with proxies works a bit differently, since everyone knows who will end up serving (those
with \(c < w\)). The key condition is that these future-soldiers have to be indifferent between volunteering and waiting
for the proxy payment (and perhaps losing it, in the case they get drafted). So the wage that induces \(d'\) of them
Consider the employment decision in the war subgame of a citizen with cost $c_i$ of going to war, facing a wage $w'$, and who expects a fraction $d' < d$ of his fellow citizens to volunteer. If he volunteers, he receives a payoff of $w' - c_i$, while if he does not volunteer, he is drafted with probability $\frac{d - d'}{1 - d'}$ and has to fight for no wage. The citizen volunteers if

$$w' \geq c_i \frac{1 - d}{1 - d'}.$$

Aggregating these individual decisions, $d' = F_c(\frac{1 - d'}{1 - d}w')$.

**Lemma 5.** With the partial draft system that induces $d' < d$ of citizens the volunteer, there is a unique SPNE in the subgame after war is declared. In that equilibrium,

a) The wage $w'$ satisfies $d' = F_c(w' \frac{1 - d}{1 - d'})$.

b) Citizen $i$ volunteers if $c_i \leq w' \frac{1 - d}{1 - d'}$.

c) Civilian $i$ supports the incumbent if $b_i - d' w' \geq 0$

d) Draftee $i$ supports the incumbent if $b_i - d' w' - c_i \geq 0$

e) Volunteer $i$ supports the incumbent if $b_i - w'd' - c_i + w' \geq 0$

Figure 5 represents the citizens' employment and support decisions in this partial-draft model, in a manner very similar to Figure 2. In it, everyone to the left of the vertical dotted line at $c_i = w' \frac{1 - d}{1 - d'}$ volunteers. All citizens in region I volunteer and support the incumbent. No citizens in region II volunteer, but they support the incumbent regardless of draft status. Finally, no citizens in region III volunteer, and they support the incumbent if and only if they are not drafted. A fraction $\frac{1 - d}{1 - d'}$ are undrafted. In summary, for a given war that requires a fraction $d$ of society to serve, the fraction of the citizens supporting the incumbent in the war subgame with a partial draft system that induces $d'$ to volunteer is

$$S(d'|d) = I(d'|d) + II(d'|d) + \frac{1 - d}{1 - d'} III(d'|d),$$

where

$$I(d'|d) = \int_{0}^{w'/(1-d')} \int_{-w'(1-d') + c}^{\infty} f(b,c)dbdc$$

$$II(d'|d) = \int_{w'(1-d')/c}^{\infty} \int_{c+d'w'}^{\infty} f(b,c)dbdc$$

$$III(d'|d) = \int_{w'(1-d')/(c+d'w')}^{\infty} \int_{d'w'}^{\infty} f(b,c)dbdc.$$

With this characterization in hand, we can see how this level of support varies with $d'$.

**Proposition 3.** Given any war, consider a partial draft system that induces a fraction $d' < d$ to volunteer. Let $B^*(d'|d)$ represent the cutoff preference parameter for which a policymaker goes to war if and only if $B \geq B^*(d'|d)$. Then $B^*(0|d) < 0$. Furthermore, let $\epsilon \equiv \frac{w_f(w)(1-d)}{d(1-d') + w f_c(w)}$ represent to volunteer is $w' = w(\frac{1-c_i}{1-d'})$, where $w$ is the proxy payment (full-volunteer wage). The rest of the analysis if very similar to the simple draft.
the elasticity of supply for soldiers when \( d' = d \), \( \bar{I} = \int_{0}^{w} f(c - w + dw, c) dc \) represent the density of nearly indifferent volunteers, and \( \bar{II} = \int_{w}^{\infty} f(dw, c) dc \) represent the density of nearly indifferent non-volunteers. Then \( B'^*(d|d) \leq 0 \) if and only if

\[
(1 - d(1 + \epsilon))\bar{I} - d(1 + \epsilon)\bar{II} + \frac{dc}{w(1 - d)} III(d|d) \geq 0.
\]

Proof. See Appendix.

Proposition 3 characterizes the conditions under which the simple draft and the volunteer military are support-maximizing. A simple draft is never support-maximizing. Intuitively, starting from a simple draft, increasing the wage slightly from zero causes a second-order drop in support due to tax costs (since the total wage bill is \( d'w' \) and both are zero), but a first-order increase in support due to a decrease in forced enlistments (a change in support of \( d'III \), where \( III \) is the population in the region III of Figure 5, where draftees oppose the war and non-draftees support it).\(^{21}\)

A pure volunteer system, by contrast, may be support-maximizing, depending on the distribution of preferences. One easy way to interpret the condition is to linearly approximate the integral \( \bar{I} \) as \( \alpha d \), the integral \( \bar{II} \) as \( \beta - \alpha d \), and \( III(d|d) \) as \( \gamma(1 - d) \).\(^{22}\) \( \alpha \) represents the average density

\(^{21}\)Note that this is true even if draftees are paid some wage, since the increase in overall payments is still second-order.

\(^{22}\)Since \( w \) is set so that a fraction \( 1 - d \) of the citizens have \( c_i > w \), \( \gamma \) simply represents the fraction of them for which \( dw < b_i < c_i \). To justify the other two approximations, take linear Taylor approximations around \( d = 0 \). This
of preferences near the line at the bottom of region I in Figure 5, so it represents the “number” of volunteers who are just indifferent between supporting the war and not. Similarly $\beta$ represents the average density of preferences near the line at the bottom of region III in figure 5, so it represents the “number” of civilians who are just indifferent between supporting the war and not. $\gamma$ is the fraction of civilians with $dw < b_i < c_i$. Then

$$S'(d|d) \approx d\left[\alpha - \beta + \epsilon\left(\frac{\gamma}{w} - \beta\right)\right].$$

All else equal, the pure volunteer military is more likely to be support-maximizing when:

- There are a lot of soldiers who are lukewarm supporters ($\alpha$ high), because a cut in their pay turns them against the war.
- There are not a lot of lukewarm civilian opponents ($\beta$ low), because a decrease in the tax cost of the war does not bring many more people to support the war.
- There are many civilians who are willing to pay, but not fight themselves ($\gamma$ high).

The factors that drive the system toward volunteer support-maximization are nearly identical to those that drive the comparison in the basic model in section 2. While in that case the comparison was between population levels in key regions, here it is a marginal comparison— the distribution of population along the edges of those same key regions.

The structure of supply can also affect the comparison of the manpower systems. First, the elasticity of supply affects which factor is the primary driver of the support comparison. If supply is very elastic, so a small drop in the wage leads to many fewer volunteers, the effect of moving away from a volunteer system is driven primarily by comparing the support lost among the civilians who will now be subject to the draft to the support gained from tax-motivated supporters. If supply is relatively inelastic, however, the effect of a wage reduction on the number of volunteers is relatively small, and the key comparison is between the soldiers who receive less surplus and the civilians who pay lower taxes.

Second, the manpower requirement of the war has no direct effect on the comparison. Instead, the size of the manpower requirement affects the support comparison only if it changes the elasticity of supply or the wage paid. If we assume, however, that the elasticity of supply is decreasing in the quantity supplied, then support for low-manpower wars is more likely to be maximized by the pure volunteer system. For low-manpower wars, the elasticity of supply is high and the wage is low, so reducing the wage a little bit saves little tax money but leads to a large jump in draft requirements. For high-manpower wars, the opposite holds. Finally, if we introduce a deadweight loss (DWL) of taxation (as we do in a subsection, below), we might expect the marginal DWL to be increasing in the total wage bill, perhaps again making a partial draft support-maximizing for high-manpower wars.

### 4.2 Selective Service

The comparisons above assumed that all citizens were equally 1) able to volunteer and 2) subject to the draft. Realistically, the draft/volunteer-eligible are a subset of society, frequently restricted to yields the above functions with $\alpha = f(0, 0)/f_c(0)$ and $\beta = f_b(0)$. 
the young and often only to men. In this section, I maintain the assumption that a citizen is draft eligible if and only if he is eligible to volunteer, but drop the assumption that this set includes all the citizens.

Assume a fraction \( \eta \in (d, 1] \) of the citizens are eligible to serve and their preferences are distributed \( f^E(b, c) \), while the remaining \( 1 - \eta \) ineligible citizens have preferences distributed according to (potentially different) \( f^I(b, c) \). The analysis of the eligible mirrors that in the base model. The only alteration is that voluntarily recruiting a fraction \( d \) of the total population requires setting \( w \) such that \( F^E_c(w) = d/\eta \), since soldiers are drawn from eligible citizens, and they comprise a fraction \( \eta \) of society. Given this wage, the support for war among the eligible under each personnel system follows directly from the analysis in section 2.4. Represent the support advantage of the volunteer system over one of the draft systems among the eligible as \( \Delta S^E = S_V - S_D \).23 As in Section 4.1, represent the support among eligible citizens under a partial draft system in which a fraction \( d' < d \) are induced to volunteer and the rest are drafted by \( S^E(d'|d) \).

Ineligible citizens support war under the draft if they get positive benefits (\( b_i > 0 \)), and they support it under the volunteer system if their idiosyncratic benefits outweigh the tax cost (\( b_i \geq dw \)). Represent the support advantage of the volunteer system over any draft among the ineligible as \( \Delta S^I = F^I_c(0) - F^I_c(dw) \). The support differential for the ineligible is independent of the efficiency of the draft, so the same differential obtains for the optimal and simple draft. Under a partial draft, the ineligible again support the war if their benefits outweigh the tax costs of the volunteers (\( b > d'w' \)). Represent this level of support by \( S^I(d'|d) = 1 - F^I_c(d'w') \).

Combining these two groups, the support advantage of the volunteer system is given by

\[
\Delta S = \eta \Delta S^E + (1 - \eta) \Delta S^I.
\]

The support under a partial draft system is given by

\[
S(d'|d) = \eta S^E(d'|d) + (1 - \eta) S^I(d'|d).
\]

The following proposition summarizes the effects of restricting draft/volunteer eligibility. The first and last results extend Propositions 1 and 3 directly, while the middle two consider the effect of broadening service eligibility.

**Proposition 4.** Assume a fraction \( \eta > d \) of the nation is draft/volunteer eligible. Then

a) \( B^*_V < B^*_O \) only if the volunteer system leads to more support among the eligible. This condition is not sufficient unless the eligible make up a large enough fraction of the society.

b) If the eligible and ineligible have the same preference distribution, the volunteer support advantage is larger for the eligible than the ineligible.

c) If the volunteer support advantage is larger for the eligible than the ineligible and \( \Delta S^E \) is decreasing in \( d \), then the support advantage of the volunteer system is increasing in the fraction of society who is eligible.

d) \( B^*(0|d) < 0 \).

23 The results below do not depend on which draft system is used.
Proof. See Appendix.

If the volunteer system is going to lead to more support than the draft, that support must come from among the eligible, since they have a larger (and potentially positive) volunteer support differential. And so for many purposes it may suffice to think about their preferences. We may want to think about the “eligible” rather broadly, as it may include both those who serve and those, such as their families, who are also affected by their service. With some reasonable restrictions on the way support among the eligible changes as a greater fraction of them are recruited, as more and more people become eligible, maybe due to medical progress or changes in cultural mores about women and combat, the volunteer military should become more likely to lead to more support.

Moving beyond the pure systems, recognizing that not everyone is eligible does not overturn the main result regarding the increase in support as we move away from a pure draft. The intuition here is the same as in section 3. Increasing from \(d' = 0\) is a second-order reduction of support among the eligible and ineligible, but a first-order increase among the eligible.

4.3 System-Specific Costs

In this section, I consider two costs which are specific to the employment system used. The first is the deadweight loss (DWL) of taxation, which applies only to the volunteer system and has played a prominent role in the extant comparison of the two employment systems (Lee and McKenzie (1992); Ross (1994); Warner and Asch (1996)). The second cost affects the draft system by allowing for slow-going or lower productivity among draftees (Berck and Lipow (2011)).

A simple way to introduce a DWL of taxation in the base model is to require the government to collect \(k > 1\) dollars for every dollar spent. This change has no effect on the analysis of the draft, but increases the tax burden felt by each citizen under the volunteer system from \(dw\) to \(dwk\). In reference to Figure 2, the change shifts upward the line separating regions C, D and E from regions G, H, and I, increasing the size of the draft-advantaged region. Intuitively, the decision to volunteer is unaffected, since it turns on a comparison of \(w\) to \(c\), but all citizens require a greater benefit from war to support it. Introducing DWL decreases the volunteer support advantage, and it decreases that advantage more if there were many with benefits near the frontier. Nevertheless, a pure draft is never support-maximizing since increasing the wage from zero still induces a second-order loss of support in exchange for a first-order gain. In terms of the policymaker’s preference cutoffs, \(B^*_V\) increases in \(k\).

A simple way of introducing differential productivity among draftees is to require the government to draft \(n > 1\) draftees for every volunteer required, so if a war required \(d\) soldiers under the volunteer system it requires \(nd\) draftees. In reference to Figure 2, this change causes no shifts in the regions, but rather affects the degree of differential support in each region. When equal numbers of troops were required under each system, no citizens in regions G,H, or I support the war under the volunteer system, but the fraction \((1 - d)\) who were not drafted support it under the draft. Now, only \(1 - nd\) do. Similarly, everyone in regions C,D, and E supported the war under the volunteer system, but only the non-draftees did under that draft system. If a larger fraction must be drafted, the volunteer support advantage in those regions increases to \(nd > d\). The net effect of these two changes is to increase the volunteer advantage, and that change is bigger if there are more people in the “swing”
regions of moderate benefits. In terms of the policymaker’s preference cutoffs, $B_D^*$ increases in $n$.

### 4.4 Endogenizing Manpower Systems

Throughout the paper, I have taken the manpower system as exogenously given. Here, in the final extension, consider what changes if the choice of manpower system is under the control of the incumbent policymaker and is chosen at the same time as the initial decision to go to war. To make the subgames after the incumbent’s choices identical to those analyzed above, assume that once the manpower system is chosen in the first period, it persists for the rest of the game, regardless of the eventual fate of the incumbent. Given these simple assumptions, the effect of endogenizing the choice of manpower systems is unambiguous.

**Proposition 5.** Assume that at the same time he chooses to go to war or peace, the policymaker can also choose between an optimal draft and a volunteer military. This new policy instrument weakly increases the range of parameters for which the incumbent chooses war.

Consider the three relationships $B$ could bear to $B_O^*$ and $B_V^*$. For a given war, if $B < \min\{B_V^*, B_O^*\}$, then it does not matter which system is in place, since the incumbent chooses peace under both systems and the support in the peace subgame is the same for both systems. If $B > \max\{B_V^*, B_O^*\}$, then the incumbent chooses war under both systems. Allowing him to choose amongst the systems does not change his decision to go to war, but he will choose whichever system has the lower cut-off (since it leads to more support). Finally, if $\min\{B_V^*, B_O^*\} \leq B \leq \max\{B_V^*, B_O^*\}$, then the incumbent chooses war under one system and chooses peace under the other. Since peace yields the same level of support under both systems, he gets the same expected payoff from choosing peace under both systems. The fact that he chooses war under one of the systems means (by revealed preference) that he has a higher payoff from choosing war under that system than he has from choosing peace under either system. This shows that giving the policymaker the power to change the manpower system can only increase the range of parameters for which he chooses war. An empirical implication is that a polity that puts the power over setting manpower policy in the same hands as the power to declare war is more likely to go to war than one that divides these powers, all else equal.

### 5 Conclusions

This paper has investigated the effect of military manpower systems on the support for war and the prosecution of efficient and inefficient wars. I identified the conditions under which the draft leads to more war than the volunteer military, and vice-versa. I identified the conditions (if any) under which pure systems dominate a mixed partial draft system, in terms of support for war. In general, the volunteer military is more likely to be support maximizing in the set of all partial drafts when the war is small, there are few lukewarm civilian supporters, there are many lukewarm military supporters, and there are many people who have large costs for fighting and moderate benefits from war. Finally, I demonstrated that either system can fall victim to both type-1 and type-2 errors in war selection that the other system avoids, at least for very general preference distributions.
For single-peaked preference distributions, several further implications arose. Specifically, the draft leads to more support for war than the volunteer military when the overall level of support is low, while the volunteer military leads to more support that the draft when overall support is relatively high. This finding implies that we should see the volunteer military positively associated with war when the policymaker is anti-war, but negatively associated with war when he is pro-war. Furthermore, more extreme biases are required to induce war over the preferences of the citizens under a volunteer system than under a draft. Finally, a volunteer system makes good wars look a little better and bad or marginal wars look a little worse, while the draft makes good wars look a little worse and bad or marginal wars look a little better. Thus, with the exception of forgoing marginally efficient wars, a polity with the volunteer military does a better job of selecting efficient wars and avoiding inefficient wars.

Returning to the question which motivated this paper, is Congressman Rangel correct that the U.S. “would never have invaded Iraq...if indeed we had a draft?” Support for a military intervention throughout the spring of 2003 was quite high, rarely dipping below 60 percent. Given this relatively high level of support, Rangel was probably correct that a draft would have lowered support for war. Furthermore, the manpower requirements for the war in Iraq were relatively small, with pre-war projections peaking at under 150,000 US troops on the ground. The actual peak deployment was a bit higher than that, reaching 160,000 in December, 2005. Nevertheless, compared to Vietnam or Korea, this was a relatively small operation. As discussed in the partial-draft extensions, the pure-volunteer system is more likely to be support maximizing for wars with small manpower requirements, again suggesting the Rangel is probably correct that instituting a (partial) draft would have lowered support. Taken together, these factors suggests that in the case of the 2003 war in Iraq, Congressman Rangel’s claim seems quite plausible.

A number of interesting paths for future work on this topic present themselves. I have mostly taken the manpower system as exogenous, except for one brief extension, but integrating the simultaneous choice of manpower system and war instigation in a unified political and economic model would be extremely interesting. I have derived results for general preferences distribution and have remained agnostic about the true empirical distribution of preferences. An estimate of that distribution would be incredibly valuable for applying this framework and assessing each system’s welfare consequences. Finally, I have investigated the effects of the manpower system on the decision to prosecute a given war. Since potential opponents certainly realize that the extant manpower system affects a country’s willingness to fight, they may adjust their stance in response to the manpower system. This means that the mix of war opportunities may change as the manpower system changes. An analysis of these general-equilibrium consequences would be an interesting extension, but the partial equilibrium effects identified in this paper are a necessary input to any such effort and should be of independent interest.

References


Kant, Immanuel, “Perpetual Peace: A Philosophical Essay,” 1795.


6 Appendix

6.1 Proofs

Proof of Proposition 1 A SPNE under manpower system $j$ consists of a war-policy decision by the incumbent $War^* \in \{0, 1\}$ and set of history-dependent employment and support strategies for the citizens $(e_i^*(War, draftee), s_i^*(War, draftee)) \in \{(0, 1)^2\}$ that depend on the policy choice and, if known, their draftee status. Consider each sub-game separately, beginning with the sub-game after War is chosen. In this sub-game there are no second-period choices, since employment status is already determined and support is immaterial. In the first period, employment and support decisions $(e_i^*(0, draftee), s_i^*(War, draftee))$ are completely characterized by Lemmas 1-3 and they are generically unique. Since only a measure zero of citizens can be indifferent, these sub-game optimal strategies uniquely yield incumbent support $S_j$.

In the peace sub-game, employment decisions only occur in the second period if war is then declared. In that eventuality, the optimal employment choices are again completely characterized by Lemmas 1-3, so $e^*(0, draftee) = e^*(1, draftee)$. Support decisions are made with the anticipation that the incumbent will continue peace more often than the challenger, and taking into account the expected employment decisions if war is declared. Lemma 4 analyzes this generically unique optimal choice, $s^*(0)$, which does not depend on draftee status (since it is not known when the decision is made). Again, only measure zero citizens can be indifferent, so these generically unique strategies imply a unique incumbent support in the peace sub-game $S^*_j$.

Finally, with $S_j$ and $S^*_j$ in hand at the beginning of the first period, the incumbent simply chooses $War = 1$ if and only if $B + p(S_j) \geq p(S^*_j)$, yielding a unique optimal War strategy for each $B$ and a unique cutoff $B^*_j$ to characterize that strategy.

$B^*_D > B^*_O$ follows immediately from the argument in the text that $S_O > S_D$ and the result in Lemma 4 that $S^*_D > S^*_O$. The ambiguity of the ordering of $B^*_D$ and $B^*_V$ follows from the argument in the text that either $S_V > S_D$ and $S_D > S_O$ is possible, while (by Lemma 4) $S^*_V = S^*_O$.

Proof for Proposition 3 $\frac{dS}{dw} = \frac{\partial S}{\partial w} + \frac{\partial S}{\partial d'} \frac{\partial d'}{\partial w}$. Since $d' = F_c(\frac{1-d'}{1-d} w')$, the implicit function theorem gives

$\frac{\partial d'}{\partial w'} = \frac{f(w'(1-d')/(1-d))(1-d')}{1 - d + w'f(w'(1-d')/(1-d))}$.

Formally, support for war is given by

$S(d'|d) = I + II + \frac{1-d}{1-d'} III$,

where

$I = \int_0^{w'(1-d')} \int_{c-(1-d')w'}^{\infty} f(b, c) db dc$.

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\[ \begin{align*}
\Delta S &= \eta \Delta S^E + (1-\eta) \Delta S^I.
\end{align*} \]

From the discussion in the text, \( \Delta S^I < 0 \), so for any positive \( \Delta S^E \), there is an \( \eta \) such that \( \Delta S < 0 \) if \( \eta < \eta^* \).

b) \( S'(0|d) = \eta S^E(0|d) + (1-\eta) S^I(0|d) \). Once can show that \( S^E(0|d) > 0 \) by an argument identical to that in section 3. Furthermore, \( S^I(d'|d) = \int_{d'}^{d'} f(b) db, \) so

\[ S^I(d'|d) = -(w' + d' \left( \frac{\partial w}{\partial d'} \right)) f_b(d'w'), \]

but at \( d' = 0 \) we have \( w' = 0 \) and so \( S^I(0|d) = 0 \).

c) Consider the volunteer system. Any preference combination \( (b,c) \) that supports war under that system as an ineligible also supports it as an eligible, since they pay the same costs and
may get some of the wages. Consider the draft system. Any preference combination \((b,c)\) that supports war under that system as an eligible also supports it as an ineligible, since they bear none of the costs. If the preference distributions are the same for both groups, this suffices to prove the proposition.

d) Let \(\Delta S^I(W)\) represent the volunteer support differential among the ineligible, when the total wage bill is \(W = dw\). It is easy to show that this differential is decreasing in \(W\) and negative and that \(W\) is decreasing in \(\eta\). Let \(\Delta S^E(d/\eta)\) represent the volunteer support differential among the eligible when a fraction \(d\) of society are required to fight the war and the eligible make up a fraction \(\eta\). Assume that \(\Delta S^{IE}(\cdot) < 0\) so the volunteer support differential is decreasing in the fraction of the eligible we need to recruit. Then, \(\frac{\Delta S}{\Delta\eta} = (\Delta S^E(d/\eta) - \Delta S^I(W)) - \frac{S'(d/\eta)}{\eta} + (1 - \eta))\Delta W^I(W)(\frac{\partial w}{dw})\). The first two terms are positive by assumption, and the third is positive since the wage bill declines.

6.2 General Single-Peaked Distributions

The main patterns of the support comparison for the bivariate normal example hold for a more general class of single-peaked preference distributions. This section explores that more general family.

Let \(F(b,c)\) represent the conditional distribution of benefits, for some cost of going to war and \(\Delta S(c)\) be the relative support for war under the volunteer military versus the optimal draft among citizens with cost \(c_1 = c\). Then

\[
\Delta S(c) = \begin{cases} 
    d[F(c|c) - F(c - (1-d)w|c)] - (1-d)[F(c - (1-d)w|c) - F(c - w|c)], & \text{if } c < w \\
    d[F(w|c) - F(dw|c)] - (1-d)[F(dw|c) - F(0|c)], & \text{otherwise.}
\end{cases}
\]

For civilians \((c > w)\), this expression is especially simple. Collecting terms,

\[
\Delta S(c) = dF(w|c) + (1-d)F(0|c) - F(dw|c).
\]

The comparison of support turns on how citizens are divided between the draft-advantaged region (I) and the volunteer-advantaged region (E). More specifically, let \(f^V(c)\) represent the average conditional density in the volunteer-advantaged region (i.e., \(f^V(c) = \frac{\int F(u|c) - F(dw|c)}{dw} du\)), and \(f^D(c)\) represent the average conditional density in the draft-advantaged region (\(f^D(c) = \frac{\int F(dw|c) - F(0|c)}{dw} du\)). Then we can write

\[
\Delta S(c) = dw(1-d)[f^V(c) - f^D(c)].
\]

Figure 6 illustrates this comparison, where the horizontal lines represent the average density in each region, and \(d\) and \(-1-d\) are the degree of volunteer advantage in the volunteer-advantaged region (E) and draft-advantaged regions (I), respectively.

If the benefits were uniformly distributed between 0 and \(w\), so \(f^D = f^V\), support is identical under both systems. If the average density is higher in the draft-advantaged region, as in Figure 6, the draft leads to more support for war (and vice-versa). The “size” of these two regions plays no important role. If \(d\) increases, the “size” of the draft-advantaged region grows, but that growth is perfectly balanced by a decrease in the degree of advantage in the draft-advantaged region and an increase in the degree of advantage in the volunteer-advantaged region, as more people are subject to the draft. A sufficient condition for evaluating relative support is convexity or concavity of \(F(b|c)\) on \(b \in [0,w]\). \(F(b|c)\) in convex (concave) on this range if and only if \(f(b|c)\) is increasing (decreasing) on it, which guarantees that the volunteer (optimal draft) system leads to more support.
A similar support comparison holds for soldiers ($c < w$), where

$$\Delta S(c) = dF(c|c) + (1 - d)F(c - w|c) - F(c - (1 - d)w|c).$$

Define $f^V(c) = \frac{F(c|c) - F(c - (1 - d)w|c)}{(1 - d)w}$ and $f^D(c) = \frac{F(c - (1 - d)w|c) - F(c - w|c)}{dw}$, similar to above, as the average densities in the volunteer-advantaged region and draft-advantaged region. Once again, $\Delta S(c) = dw(1 - d)[f^V(c) - f^D(c)]$, and so the volunteer support advantage among soldiers again turns on the relative average densities. Again, convexity or concavity of $F(b|c)$ on $b \in [c - w, c]$ is a sufficient condition for analyzing the support differential. $F(b|c)$ is convex (concave) on this range if and only if $f(b|c)$ is increasing (decreasing) on it, which guarantees that the volunteer (optimal draft) system leads to more support.

Adding a little structure to the distribution of preferences reveals an even cleaner characterization.

**Lemma 6.** For a given cost of going to war $c$, $\Delta S(c) \geq 0$ if and only if $f^V(c) \geq f^D(c)$. If we further assume the conditional distribution of benefits $f(b|c)$ is single-peaked, and let $b^*(c)$ represent the benefit with the greatest density, then $\Delta S(c) \geq 0$ if $b^*(c) \geq \min\{c, w\}$ and $\Delta S(c) \leq 0$ if $b^*(c) \leq \min\{c - w, 0\}$.

From Lemma 6, when distribution of benefits from war is unimodal, the sign of relative support can often be determined simply by knowing the location of the modal benefit. The density must decline as the benefit moves away from the modal benefit, and, for a given cost, the region in which more people support war under the optimal draft is always below the region where more people support the war under the volunteer military. If the modal benefit is relatively high, the volunteer military leads to more support, since the density must decline even further.
as it enters the draft-advantaged region. If it is relatively low, the draft leads to more support, since the density must decline as the benefit increases into the volunteer-advantaged region.

Finally, note the unimportance of the conditional mean or median benefit for a comparison of support. Except in the case of symmetric distributions, a long tail could put the mean and median nearly anywhere. But when comparing support under these two systems, all that matters is whether the density is increasing or decreasing through the swing regions, and that comparison is completely governed by the mode.

So far, the analysis of relative support has been for a given cost, \( c \). But, of course, integrating up leads directly to the following proposition.

**Proposition 6.** Define \( f^V(c) \) and \( f^D(c) \) as in Lemma 1. Then \( S_V - S_O \geq 0 \) if and only if

\[
\int_{-\infty}^{\infty} (f^V(c) - f^D(c)) f_c(c) \, dc \geq 0.
\]

Furthermore if \( f(b|c) \) is single-peaked at \( b^*(c) \), then

1) If \( b^*(c) \leq \min \{ c - w, 0 \} \) for all \( c \), then the optimal draft leads to at least as much support for war as the volunteer military.

2) If \( b^*(c) \geq \min \{ c, w \} \) for all \( c \), then the volunteer military leads to at least as much support for war as the optimal draft (and therefore, as the simple draft).

Proposition 6 extends the analysis from Lemma 6 into the second dimension. It establishes that if the “ridge” of modal benefits is above some cutoff, the volunteer system leads to more support, while if it is below some cutoff, the optimal draft system does. If the modal benefits are above the cutoff for some costs, and below for other costs, little can be said in general, since there are pressures in each direction. There are groups in society for which the draft leads to more support and some groups for which the volunteer military leads to more support, and the total level of support depends on both their sizes and how strong their differential support is.

Combining these results with the fact that support is always higher under an optimal draft than a simple draft bounds the relationship between the simple draft and volunteer military, although the results are not as clean as the optimal draft versus volunteer comparison. Certainly, if the volunteer system leads to more support than the optimal draft, it leads to more support than the simple draft. Any further analysis turns crucially on the distribution of costs \( (f_c(c)) \), since the support under a simple draft is nearly identical to that of the optimal draft for costs near \( c = w \), but the simple draft is increasingly disadvantaged for costs further away (as regions F and G become more important).