THE SOLDIER'S DECISION TO SURRENDER:

PRISONERS OF WAR AND WORLD POLITICS

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Paper prepared for presentation at the 1997 Annual meeting of the American Political Science Association. Washington, DC, August 28-30, 1997. As usual, the order of the authors' names is alphabetical and does not connote principal authorship. Our undergraduate co-authors provided invaluable assistance. We thank the National Undergraduate Student Research Program for providing research assistance funding for Ms. Chen. The "levels of analysis" theoretical framework and international relations share an unusual relationship. More than most subfields in political science and other social sciences, international relations has explicitly referred to and relied on an extensively specified levels of analysis framework, using this framework to generate new theories and build bridges between theories. However, international relations has left woefully understudied a crucial level of analysis which has drawn heavy interest from other subfields and disciplines, namely the individual level of analysis. While other political science fields have paid meticulous attention to the individual as political actor, international relations has given this level short shrift, studying on the individual level only political leaders.

This neglect has left important concepts in international relations unexamined. Events in world politics are greatly determined by the actions of individuals other than political leaders: voters cast ballots, workers keep factories running, and soldiers fight. The choices of individuals aggregate to provide options and resources available to nations: expanding our understanding of these choices will advance our understanding of world politics as a whole.

This paper advances our understanding of the individual level by modeling the decision of soldiers whether or not to surrender on the battlefield. Developing our understanding of when soldiers stand and fight and when they break under fire builds microfoundations of our understanding of military power. We place this decision in a rational choice framework, providing a new perspective on a decision traditionally examined with tools from clinical and cognitive psychology. We use the rational choice framework to develop new ideas which link regime type and surrender behavior, striving to further develop the field's understanding of the links between domestic and international politics.

This paper proceeds in five sections. The first section presents a theoretical discussion of the first image, discussing its role in international relations as well as other subfields and social sciences. The second section discusses past scholarship that has addressed the question of why soldiers surrender. The third part presents a formal,

rational choice model of the decision to surrender. We derive a number of hypotheses from this model, including that soldiers fighting for democracies are less likely to surrender, and that soldiers fighting against democracies are more likely to surrender. The fourth section presents quantitative tests of some of our hypotheses. In particular, we find support for the proposition that surrender is more frequent within autocratic armies, and that surrender is most frequent against democratic armies. The final section presents conclusions and discusses directions for future research.

I. The First Image

Kenneth Waltz (1959) described three images in international relations, the individual, the state and the international system. Though he found the third image to be the most fruitful for theorizing, a number of international relations scholars have focused on the first image, many exploring psychological approaches (see, for example, Jervis, 1976; Lebow, 1981). Significantly, however, first image approaches in international relations have been mostly limited to the study of individual leaders.

This focus on leaders to the exclusion of other individuals is not mimicked in other subfields or social science disciplines. Within political science, scholars within both American politics and comparative politics who look at individuals have not limited their purview to individual leaders. In American politics, for example, there is a long history of scholarship exploring the individual's decision to vote, the formation of individuals' beliefs about politics, and so forth. Within comparative politics, scholars have also looked at the micromotives and behavior of people other than leaders, the literature on peasant politics and rebellion being one example (Scott, 1985). Outside of political science, psychology studies the cognition and behavior of all individuals, and microeconomics seeks to understand the behavior or individual consumers and workers as well as owners of firms.

For the field of international relations, this neglect of individuals other than leaders has left some important questions unasked. Thomas Schelling (1978) nicely demonstrated the importance of understanding individual motives and decisions in order to be able to assess the behavior and dynamics of larger groups. International relations

scholars tend to assume that when leaders make decisions, they have at their disposal vast groups of people that will behave as cogs in the machine of state, serving the whims of leaders. Perhaps the most developed exception to this rule is the scholarship exploring the relationship between public opinion and foreign policy (see, for example, Mueller, 1973, and Gartner, Segura, and Wilkening, forthcoming), though other literature on the question examined in this paper, the determinants of the behavior of individual soldiers on the battlefield, is also emerging (Reiter and Stam, 1997a).

In this paper, we relax the assumption that soldiers are automata serving the bidding of statesmen and generals, assuming instead that they are individuals who make carefully reasoned choices. As we will demonstrate, this approach will provide an improved understanding of the sources of military power and war outcomes, durations and costs. The massive resources invested in propaganda to persuade enemy troops to surrender serves as testimony that government officials and military leaders have long known the importance of the individual soldier to war outcomes.

II. The Study of Surrender

Surrender is an important and understudied aspect of war. Rates of surrender are tied to the outcomes of war for two reasons. First, an army with a higher rate of surrender will find its army being drained of manpower on the battlefield. In a study of all wars since 1815, Allan Stam (1996) found that the troop levels were significantly correlated with war outcomes. Second, once captured prisoners can be used by the opponent as labor to enhance its war effort. This contribution is often not trivial; in the final three years of World War II, POWs held by the United States contributed more than 90 million man-days of work to the Allied war effort, offsetting a critical manpower shortage (Lewis and Mewha, 1988: 263).

Modern social science scholarship has mostly viewed the decision to surrender as best understood by social psychology. We find this literature not so much as being incorrect, but rather as offering an incomplete picture of a soldier's decision to surrender. Our model, discussed later in the paper, fills in an important gap in our understanding of

the dynamics of surrender by directly considering how a soldier weighs the costs and benefits of surrender.

DEFECTION AS PSYCHOLOGICAL AND UNIT FAILURE

The bulk of studies on surrender and desertion by soldiers in wartime treat these actions as a form of psychological disorder. Soldiers who desert or surrender to the enemy are classified as inherently mentally unbalanced. The deserter is like the man who abandons his family, a mentally ill social deviant. Shils' and Janowitz's (1948) analysis of the extremely low desertion rate in the German military during WWII is a landmark work on this subject. In "Cohesion and Disintegration in the Wehrmacht in World War II," they apply psychological methodology to conclude that, in wartime, the unit is the soldier's only social group and, as such, fulfills his primary needs (284). This includes not only his organic needs for food, rest and shelter, but also his equally important needs for affection, approval and rules (281). The soldier's tendency towards self-preservation in battle is minimized when these primary needs are met by his unit (281). Secondary or political considerations mean little to the individual soldier (284) because they do not continue to fight from a larger belief in the war. Rather they stay and fight out of loyalty to their unit-comrades.

Those who do surrender while part of a fully functional unit, Shils and Janowitz assert, are social deviants. These are "men who [have] difficulty in personal adjustment, e.g., in the acceptance of affection or in the giving of affection. They [are] men who [have] shown these same difficulties in civilian life, having had difficulties with friends, work associates, and their own families, or having had criminal records" (285). If the military unit should fall apart "through separation, breaks in communications, loss of leadership, depletion of personnel, or major and prolonged breaks in the supply of food and medical care" (281), soldiers will need to look elsewhere for the fulfillment of their primary needs. The trauma of losing their primary group will induce a psychic imbalance and fear for survival that many soldiers will seek to escape through desertion (281). John Ellis (1980: 245) also claimed that the psychologically abnormal and socially ill-adjusted are most likely to surrender. He noted that in World War II, American deserters were

more likely to have a history of truancy in school, and British deserters were more likely to be young and have a history of mental illness.

Bruce Watson (1997) explored the same topic of soldier defection within the broader context of military disintegration. He defined military disintegration as that situation which arises when soldiers cease to recognize their formal leadership, rules of conduct, and internal cohesion. The unit collapses, leading soldiers to mutiny, murder civilians, pillage, massacre, and, often, to surrender or desert (1-2). Watson uses case studies to build his theory that this military disintegration is a result of a military unit's failure to deal adequately with a situation for which a clear contingency plan has not been set. This situation, holds Watson, creates a *crisis* within military units: unless dealt with appropriately, crisis leads to military disintegration (24).

Although Watson dealt with a broader topic than Shils and Janowitz did, his conclusions about desertion and surrender are much the same. He discussed the nature of military training, especially in conscript armies, which he finds to be more prone to disintegration than volunteer armies due to their weaker secondary/political/ideological ties to the military (18-19). This training has two consequences: the main, and intended, consequence is to replace soldiers' conventional socio-cultural morals with military ones that will make them into efficient killers (22).

The secondary consequence, not intended but encouraged, is the formation of informal military social groups based on camaraderie that parallel the formal structure of the unit. These groups generate their own values, beliefs and ideologies that may have little to do with the formal unit (23). The psychological rigors, constant fear and loneliness of war make soldiers highly dependent on the social support of their comrades. In a crisis situation where formal leadership fails to come through effectively, Watson holds that the social unit takes over from the formal one and asserts its own rules of conduct. Thus, Watson takes Shils and Janowitz's view of unit psychology and redirects it, separating the social and formal units of the military. This allows Watson to assert that desertion occurs due to a break with the formal military unit, not the informal, social one. To both Shils/Janowitz and Watson, however, unit disintegration leads to a psychic upheaval for individual soldiers. Both then go on to present desertion, surrender and mayhem as the result of this psychological breakdown in rationality (25).

Although the logic of both studies appears to be plausible, supporting evidence is somewhat thin. The Shils and Janowitz study has been criticized on a number of methodological grounds, including that its sample is contaminated by selection effects and that the German POWs interviewed were motivated to downplay ideological concerns to appease their captors. Further, more recent scholarship has challenged the notion that the military effectiveness of the Wehrmacht was sustained by robust primary groups, arguing for example that rapid turnover rates on the Eastern Front made the maintenance of primary groups impossible, though surrender rates were low and combat effectiveness was high (Bartov, 1991; Forster, 1988; Fritz, 1996).

Ellis' point is also not unassailable. If one suspected that the maladjusted and abnormal are especially likely to desert, then one would expect that psychological screening of recruits would decrease individual soldier breakdown on the battlefield. However, though the United States increased the rejection rate of conscripts on ground of being psychologically unfit by nearly seven times from World War I to World War II, the percentage of psychiatric casualties was dramatically higher in World War II (Gabriel, 1988: 26).

Lastly, Watson's study rests on limited empirical support, as among the six case studies he examined only one was an instance of surrender. Further, Watson does not address singular individual desertions. He implicitly posits that the soldier deserts only when crises force him to do so. Watson does not deal with the rational disincentives to disobeying orders that governments provide. While Shils and Janowitz note the prohibitive policies of the German government that (1) threatened to punish deserters' families and friends as well as the deserters themselves upon repatriation and (2) prevented night-time defections by plowing the front lines with explosives (290-291), they relegate these disincentives to positions of secondary importance.

Both theories' emphasis on the primacy of secondary needs over primary needs is empirically unpersuasive. It is both logical and empirically well-founded to assert that

soldiers seek credible means of fulfilling their primary organic needs and generally go where these seem most accessible. Allied propaganda geared to encouraging German soldiers to surrender, in particular the safe-conduct passes assuring food, shelter, and good treatment from the Allies to POWs had a real effect on surrender rates (284).

III. The Surrender Model

Below, we model the decision an individual soldier makes on the battlefield as to whether or not to surrender, hide from battle, or fight. Our assumption is that this choice is a fundamentally rational one, that is, we can best understand it by evaluating the options, preferences and information environments of soldiers. Our exploration of the surrender option available to soldiers can be paralleled with Hirschman's (1970) exit option in his exit/voice/loyalty trio.

Our use of rational choice assumptions to understand the behavior of soldiers is unconventional, but not unprecedented.¹ Katherine Giuffre (1997) used rational choicetype assumptions to study North Carolinean defection during the Civil War. Following James Scott's (1985) theoretical treatment of peasant behavior, she posited (and found) that soldiers from backgrounds with less to gain from a Confederate victory would be more likely to desert. Margaret Levi (forthcoming) analyzed military enlistment, a behavior usually framed exclusively in terms of patriotism (or the lack thereof), in a rational choice context emphasizing the nature of domestic political institutions. Robert Axelrod (1984) argued that the decisions of soldiers on the Western Front during World War I to honor informal cease-fires can be explained using rational choice and cooperation theory, as opposed to "war-weariness." Finally, William Riker (1995) argued that even self-sacrificial acts on the battlefield, such as throwing oneself on a live grenade, can be understood using rational choice principles.

Our intention here is to extend on this scholarship, explicitly modeling the crucial decision every soldier faces of whether to hide, fight, or surrender. Our model is

¹ In a different expansion of the first image, Solomon (1997) argued for the education of world citizens in international relations theory so as to overcome the threat of war.

portrayed in Figure 1.



Figure 1. The POW Game in Extensive Form

Following the nomenclature in Table 1, if the soldier decides to hide, then he is either punished with probability 1-N or is not punished with probability N. If the soldier fights, is either killed in action with probability 1-L, or lives with probability L. If the soldier surrenders, then the capturing side either tortures him with probability 1-H or respects his rights as a prisoner (honors the Hague convention) with probability H. If the Hague convention is honored, then the soldier's side either wins with probability W, or loses with probability 1-W. If his side wins, he is granted asylum in his captor nation with probability A_w or is repatriated back to his homeland with probability 1-A_w, where he is either accepted home with probability G_w or executed for treason with probability 1-G_w. If the soldier's side loses, then he is granted asylum in his captor nation with probability A_L or repatriated back home with probability 1-A_L, where he is accepted with probability G_L or executed with probability 1- G_L .

TABLE 1. SUMMARY OF NOTATION	
Factors Defined by Nature that Describe the State of the World	
Likelihood that the opponent adheres to the Hague Conventions	Н
Likelihood that the opponent does not adhere to the Hague Conventions	1-H
Likelihood that his army Wins the War	W
Likelihood that his army loses the war	1-W
Likelihood that the opponent grants Asylum	А
Likelihood that the opponent forces repatriation of POWs	1-A
Likelihood that the opponent treats its returning soldiers well, post-bellum	G
Likelihood that the opponent executes its soldiers, post-bellum	1-G
Likelihood that the soldier is Not punished for his decision to shoot or hide	Ν
Likelihood that the soldier is punished for his fight or AWOL decision	1-N
Likelihood that the soldier Lives through the war	L
Likelihood that the soldier is killed in the war	1-L
Utilities of the Possible Outcomes of a Soldier's Decision	
Soldier survives in a satisfactory condition	1
Soldier does not survive	0
Soldier survives in an unsatisfactory condition	0

To simplify matters, we assume that being killed in action, being punished after hiding on the battlefield, and being executed after being repatriated all have the same utility, which we normalize to 0. We assume that not being punished after hiding, fighting and living in combat, being repatriated after surrendering, or accepting asylum all have the same utility, which we normalize to 1. We assume that W, H, N, L, A_L, A_W, G_L, and G_W are all probabilities ranging from 0 to 1. We further assume that the probability of being granted asylum is higher if the soldier's side loses (A_L>A_W) and the probability of not being executed following repatriation is higher if the soldier's side wins (G_W<G_L).

The utility of fighting is

1*L+(0*(1-L)) = L

The utility of hiding is

1*N+(0*(1-N)) = N

The utility of surrendering is

 $(1^{*}H^{*}W^{*}A_{W}) + (1^{*}H^{*}W^{*}(1-A_{W})(G_{W})) + (0^{*}H^{*}W^{*}(1-A_{W})(1-G_{W})) + (0^{*}H^{*}W^{*}(1-A_{W})(1-G_{W})(1-G_{W})) + (0^{*}H^{*}W^{*}(1-A_{W})(1-G_{W})(1-G_{W})) + (0^{*}H^{*}W^{*}(1-A_{W})(1-G_{W})(1-G_{W})(1-G_{W})) + (0^{*}H^{*}W^{*}(1-A_{W})(1-G_{W}$

 $(1*H*(1-W)*(A_L)+(1*H*(1-W)*(1-A_L)(G_L))+$

 $(0^{H*}(1-W)^{(1-A_L)*}(1-G_L)) + (0^{(1-H)})$

Which simplifies to:

 $H(WA_W + WG_W - WA_WG_W + A_L - WA_L + (1-W)(G_L - G_LA_L))$

And

Expression 1. $H(W(A_W-A_L+G_W-G_L-A_WG_W+A_LG_L)+A_L+G_L-G_LA_L)$

Soldiers hide when $U_{hide} > U_{fight}$ and $U_{hide} > U_{surrender}$. They fight when $U_{Fight} > U_{surrender}$ and $U_{Fight} > U_{hide}$.

They surrender when U_{Surrender}>U_{fight} and U_{Surrender}>U_{hide}.

Comparative Statics

As the value of Expression 1 gets larger the chances of surrender increase. We offer below a number of comparative statics results that emerge from analysis of this expression. We also draw out a number of hypotheses that flow from the comparative statics

(1) As W increases, the chance of surrender decreases. This is true if (AW-AL+GW-GL-AWGW+ALGL) is negative, which it is because all of these variables are between 0 and 1, and because AL>AW and GL>GW.

The reverse of this result is that as an army begins to lose, its soldiers will become more likely to surrender. This finding has a self-sustaining dynamic; as a side begins to lose, desertions from its ranks increase while desertions from the opponent's ranks decrease. This adversely affects the balance of forces and makes it even harder to turn the tide on the battlefield. We note that one possibility is that there may be a tipping point for desertion. In this case, if desertions increase past that threshold there is an irreversible tide as desertions continue to mount to the point where military defeat is unavoidable.

Hypothesis 1: Armies that are losing will have higher rates of desertion than armies that are winning.

We test hypothesis 1 using a proxy for beliefs about military victory, the actual ex post outcome of the war. While the ultimate outcome may be uncertain at the outset of a

war (in fact some argue that without uncertainty war is irrational (Fearon, 1995)), information about the likely outcome is revealed quite quickly in most wars. This explains, in part, why most wars are quite short – both sides figure out who will win in the long-run and as a result settle before the death of the last soldier on the losing side. Codings for win, draw, and lose come from Reiter and Stam (1997).

(2) As H increases, the chance of surrender increases. For this to be true, the entirety of the expression to the right of H must be positive. Rearrangement of Expression 1 inside the broadest parentheses yields WAW(1-GW)+W(GW-GL)+GL(1-AL)+AL (1-W)+WALGL, which is positive because all variables are between 0 and 1, and because AL>AW and GL>GW.

The more likely it is that the Hague Convention protecting the rights of prisoners is honored by one army, the more likely are soldiers from the opposing army to surrender. Therefore, honoring the Hague convention is ironically likely to increase an army's chances for victory on the battlefield. More broadly, this is an interesting case in which a state can advance its national interest and increase its military power by obeying international law even in the absence of cooperation from the other side. In one sense, the state would benefit in the absence of cooperation, as if its adversary tortured its POWs then that the state's soldiers would be less likely to surrender. On the Eastern Front in World War II, both German and Soviet soldiers fought on through harsh conditions in part because troops from both sides knew that surrender would put them in the hands of merciless captors.

The connection between protecting POWs' rights and battlefield surrender dynamics has implications for the relationship between democracy and international conflict. We first note that democracies are more likely to honor the Hague convention and respect the basic physical rights of prisoners of war. A rational military leadership would, ceteris paribus, prefer to safeguard the rights of POWs, as that would increase the enemy's rate of desertion. The protection of these rights is quite consistent with the emphasis on individual rights prevalent in democratic political culture; indeed, early Enlightenment thinkers like baron de Montesquieu (1989: book 10, chapter 3) and Jean

Jacques Rousseau (1950: 11) emphasized that a prisoner can not be killed or enslaved once captured and disarmed (see also Flory, 1942).² Indeed, the historical record reveals that democracies and liberal states have been more likely to respect the rights of POWs. As far back as 1792, the French National Assembly declared that POWs had certain inalienable rights, and were not at the mercy of individual captors (Grady, 1970: 81-2). The United States has also generally ratified conventions protecting POW rights, and has obscured them during its wars (Grady, 1970). During World War I, liberal political culture inspired a number of belligerents to protect POWs' rights (Speed, 1990). Democracies are also more likely to stand by international commitments such as the ratification of POW conventions, both for institutional and normative reasons (see de Tocqueville, 1969), explaining why alliances involving democracies last significantly longer than other alliances (Gaubatz, 1996; Bennett, 1997; Reed, 1997).

Conversely, authoritarian leaders face constraints which make it difficult for them to safeguard the rights of prisoners. An authoritarian leader presides over a political system which is predicated on the denial of individual rights and liberties to citizens and the prevalence of terror. Rights which are denied to the general population cannot be extended to enemy POWs without jeopardizing the integrity of the regime. For example, Japan's treatment of POWs has varied with changes in its domestic politics. In the early decades of the century, its commitment to becoming admitted to the liberal world community led it to ratify international conventions protecting POW rights, and to treat Russian POWs in the Russo-Japanese War and German POWs in World War I quite well. The late 1920s and 1930s saw a hypernationalistic militarism swamp Japanese culture and politics. Japan refused to ratify a 1929 convention on POW rights, and inflicted notoriously horrific treatment on Allied POWs during World War II. After the war, a new democratic order was imposed on Japan, which saw a renewed commitment to respecting POW rights and humanitarian concerns in general (Burdick and Moessner,

² Expectedly, David Hume's (1983: 23) utilitarianism led him to slightly different conclusions. He argued that a civilized state fighting a barbarian state may be required to ignore the laws of war in order to effectively defend itself.

1984; Checkland, 1994).

In sum, democracies are more likely to safeguard the rights of POWs than are other kinds of states. This means that soldiers on the battlefield facing an army of a democracy are more likely to have a higher H, and are therefore more likely to surrender. This yields:

Hypothesis 2: Soldiers are more likely to surrender if the society of its opposing army on the battlefield is democratic.

To test Hypotheses 2, we use democracy scores from the Polity III data set (Jaggers and Gurr, 1995).³ The democratization scores are aggregations of the degree of openness of the system, the degree of participation, and the degree of competitiveness of candidate selection. The democracy scale ranges from 0 to 10, where 0 indicates the absence of democratic institutions and 10 the presence of very strong democratic institutions. Here we code the opponent's democracy score. For purposes of the test, we create a dummy variable coded 1 if the Gurr Democracy score is 8 or greater, 0 otherwise. In a survey of states that honor the Hague convention, Lwin found that highly democratic states routinely honor the Hague agreements. Because the underlying belief is dichotomous, we created a dummy variable for opponent's democracy score.

One possible critique of our model is that it neglects an important strategic component of interaction between belligerents. Specifically, one state is more likely to honor the rights of enemy POWs if the enemy honors the rights of its POWs, such that the decision to honor POW rights might be accurately described by the games of stag hunt or prisoner's dilemma. Though this claim has some intuitive appeal, it should be noted that states benefit if their POWs are treated badly in captivity, as that decreases desertion

³ Some countries which were invaded and conquered in the same year (such as Norway in 1940) are coded as having missing democracy and autocracy scores by the Polity III data set. For these cases, we used the democracy and autocracy codings in the previous year (Norway's 1939 scores, for example), as the "missing" scores reflect the lack of a normal political system during occupation; these countries had functioning polities prior to the invasion and during the war, meaning that our hypotheses can make predictions about how their political systems affected war outcomes.

on the battlefield. In other words, one might argue that the best situation is one in which your side honors POW rights and the other side does not, the equivalent of a CD outcome in the parlance of 2x2 games.

There are also quite a few counterexamples to the reciprocity hypothesis from the historical record. For example, even though Japan treated American POWs horrifically in World War II, the United States gave Japanese and other POWs humane treatment (Grady, 1970). If the reciprocity thesis were true, one would expect that if a state was simultaneously at war with a democratic state and an autocratic state, it might protect the rights of the democratic POWs in order to maintain cooperation with the democracy and provide ongoing incentives for the democracy to protect its POWs, but not safeguard the rights of the autocratic POWs, since it would not be confident that cooperation could be sustained with the autocracy. However, in World War I Germany treated Russian, French, and British POWs similarly, even putting them in the same POW camps (Speed, 1990: 67-8).

The surrender model, while quite simple in its structure, is consistent with a number of empirical findings regarding the behavior of states in war, and more specifically the relationship between state type and conflict processes. Specifically, the model is consistent with and gives insight into the mechanisms behind, various well-established empirical findings.⁴ In cases where one side is a democracy we will demonstrate that the democracy represents, in essence, an attractive nuisance on the battlefield, leading the wars that democracies participate in to be shorter than those in which they do not. Wars involving two autocracies are also likely to be longer because neither side's military forces get depleted by substantial desertion (Bennett and Stam, 1996, 1997). Furthermore, the model also provides substantive logic for the empirical fact that highly democratic states are most likely to win their wars (Reiter and Stam 1997b).

⁴ For a similar discussion but one that relies not on the role of the individual soldier but on the individual member of a state's selectorate see Bueno de Mesquita and Siverson (1997).

(3) As AW increases, the chance of surrender goes up. This is true because GW<1.

(4) As AL increases, the chance of surrender goes up. This is true because AL<1

The above two propositions posit that if soldiers are confident that their captor will grant them asylum, then they will be more likely to surrender. Significantly, democracies are more likely to grant POWs asylum. Indeed, the Korean War dragged on several months longer than it otherwise might have in part because the United States was intent on giving Chinese and North Korean POWs the right to choose asylum rather than be repatriated. This finding is consistent with Hypothesis 2; soldiers are more likely to surrender to democratic opponents.

(5) As GW increases, the chance of surrender goes up. This is true because AW<1.

(6) As GL increases, the chance of surrender goes up. This is true because GL+WALGL>WGL+ALGL.

If soldiers are confident that they will not be executed following repatriation, then they are more likely to surrender. Conversely, states can send their soldiers a powerful signal by executing their own repatriated soldiers.⁵

Hypothesis 3. States that execute repatriated soldiers will suffer fewer deserters.

Unfortunately, we do not have systematic data on repatriation rates and so are unable to test this hypothesis. Anecdotal evidence suggests that some leaders think along these lines, however. Following the end of World War II, Stalin executed or exiled literally millions of his own returning troops in order to send a message to soldiers who

⁵ A factor potentially complicating whether repatriated soldiers are executed is the question of whether or not the losing country suffers a foreign-imposed regime change after the war. In such a case, the relationships between regime type and incentives for surrender would become more complex, as a country's regime type would be different after the war as compared to during the war. On foreign-imposed regime change, see Werner, 1996.

might be called upon to fight a war against the west some time in the future. Democracies are less likely to execute soldiers who surrendered to the enemy; they may be punished, but the punishment is more likely to take the form of imprisonment or public disgrace rather than execution, a fate deserters returning to an autocratic regime are more likely to face. Therefore:

Hypothesis 4: Soldiers in democratic armies are more likely to surrender.

As with hypothesis 3, we cannot test Hypothesis 4 directly. In this case it is not simply a matter of needing to find the requisite data. Because war between strongly democratic states is quite rare, soldiers in democratic states only face opponents that are unlikely to honor the Hague convention, leading them to be unlikely to surrender. If both sides in a war were highly democratic, the statics of the model imply that both sides would find it difficult to field a competent army. This provides an alternative explanation for the democratic peace and one that matches the 1960's rhetorical question, "What if they had a war and nobody came?" Our model predicts that wars between democracies would be terrifically difficult to stage simply because all the incentives exist for soldiers to not fight hard and to surrender when the opportunity presents itself. The lack of wars between democracies provides indirect support for this hypothesis.

(7) As L increases, the chance of fighting goes up.

As a soldier becomes more confident that he will survive the war, he is more likely to fight rather than hide or surrender. Anecdotal evidence for this comes from SLA Marshall's studies on firing rates during World War II. Marshall found that large numbers of soldiers failed to fire their weapons on the battlefield. Soldiers using crew served weapons, such as field artillery were more likely to fire. Not coincidentally death rates are highest among infantryman, lower among heavy weapons units such as armor and artillery. Two factors are likely to affect a soldier's estimate that he will ultimately survive. First, the general tide of the war has a strong impact on this estimate. A winning army is likely to suffer fewer casualties than a losing army. This proposition is consistent with Hypothesis 1. Second, military technology which guarantees high casualties should decrease the soldiers' estimates of survival. Independent of the question of which side

will eventually win, military environments which begin to approximate mass killing zones are more likely to inspire surrender. During the 1991 Gulf War, Iraqi soldiers in the Kuwait were terrified by an onslaught of bombing attacks for weeks before the ground war begun. This fear of being slaughtered in their bunkers contributed in large part to the mass surrender once the ground war began (see U.S. News and World Report, 1992).

Hypothesis 5: Surrender will be more frequent in military environments in which high casualty rates are expected.

Military strategies and their interaction with terrain have a tremendous effects on war outcomes and costs (Stam, 1996). They do so through two important mechanism: first, they directly influence the length of the war, second, they profoundly influence the numbers of casualties an opponent will likely suffer. Highly mobile strategies and punishment strategies which rely on surprise offer the potential to generate large numbers of casualties among the surprised. Faced with certain death, soldiers in these situations will likely surrender far more willingly that they would in a set-piece battle where both sides begin to fight by emerging from well prepared defensive positions.

Strategy can have a major impact on a state's ability to absorb and inflict costs, and hence on the state's prospects for victory. We categorize military strategies as follows. States choose among three strategies, maneuver, attrition, and punishment (see Mearsheimer, 1983; Posen, 1984; Stam, 1996). We then match each of these strategies with either offensive or defensive political goals. Significantly, the effectiveness of a particular strategy depends on the adversary's choice of strategy. We predict the effectiveness of various strategy combinations based on two assumptions:

1) The strategy that leads to the minimum military losses maximizes the opportunity to continue to fight in the future. All other things being equal, the side that can fight more battles will win. Punishment strategies avoid direct exchanges whenever possible, leading to the fewest direct battle losses. Maneuver strategies, predicated on disrupting communications and control, while avoiding direct confrontations, minimize battle losses compared to attrition strategies.

2) Quicker outcomes are better for the side trying to alter the status quo (offensive doctrines, the opposite for defensive doctrines). This is due to the difficulty of maintaining domestic political support in the face of mounting casualties. Maneuver strategies lead to the quickest outcomes, followed by attrition and then punishment strategies. We use this rule to determine the relative effectiveness of strategy combinations not differentiated by Assumption 1.

We coded military strategy as a 5 step scale following Stam's (1996) procedures. The first step is to code whether a state has offensive or defensive political goals, based on Dupuy and Dupuy (1986) and Holsti (1991). Next, we coded the choice between maneuver, attrition and punishment, following the analysis in Dupuy and Dupuy (1986), Dupuy (1983), and Clodfelter (1992). Cases where the historical consensus was that a state used a blitzkrieg strategy, or where the actor encircled and divided the opponent's forces, we coded maneuver.⁶ Instances where a state followed a Maoist guerrilla strategy or where civilians were the principal military targets were coded punishment. In cases where states used multiple strategies, we coded the strategy that absorbed the majority of the state's military assets. If there was more than one country on one side, we coded the strategy of the largest state (in terms of capabilities).

Our strategy variables are certainly simplifications of reality. Where there is significant variance in military technology, ideas about combat, and so on, simplification

⁶ In the cases where there was no clear distinction between maneuver or blitzkrieg strategy and attrition strategy (n=3), we coded the modal strategy of attrition (see Bennett and Stam: 1996, 247n). There are also a few cases where states initially tried to execute maneuver strategies, but circumstances forced them into attrition strategies. An example is Germany's World War II strategy on the eastern front, where Germany initially used a maneuver strategy but switched to an attrition strategy as the blitzkrieg ran out of steam in the Soviet Union. Unfortunately, purely *ex ante* coding of strategy is impossible without access to military strategic plans. However, in the empirical record there are relatively few instances where strategy changed between our categories, and so is a problem in only a few cases. When states did change strategy, they tended to do so soon after the beginning of a war, and so we believe that the magnitude of this problem is not severe. From an historical perspective, it certainly does not affect our conclusion about the past effect of democracy and democratic war initiation.

becomes necessary. However, we are not the first to propose concepts about the execution of combat intended to transcend a particular military environment. Such has been the general aim of military historians and theorists, including Sun Tzu (1963), Clausewitz (1968), and Liddell Hart (1967). The essential question, though, is whether our conceptualizations explain more than they obscure. We believe the answer to be yes, if for no other reason than that this set of strategy variables has been found to be significantly correlated with war outcomes and durations elsewhere (Bennett and Stam, 1996; Reiter and Stam, 1997; Stam, 1996).

In our analysis we control for the interaction of the strategy scale and the terrain upon which the two sides fight the war. Terrain interacts significantly with strategy choice by enhancing or detracting from the advantages offered by wise strategy choice. For example, a maneuver strategy can better exploit an attrition strategy in flat plains then it can in mountainous jungle. Terrain codings come from *New York Times Atlas of the World* (1983) and correspond to the location of the majority of the battles fought during the war (Dupuy, 1986). We then scaled the terrain types to match the predicted movement times, using data from Dupuy (1979) which estimated movement speeds on various types of terrain.⁷ The final terrain index ranges from 0.3 to 1.2, where 1.0 corresponds to the speed at which vehicles and troops can move on open rolling terrain, similar to the plains found in Eastern Europe. Scores above 1.0 correspond to desert areas with flat, hard packed surfaces. Codings close to 0.3 match places where movement of vehicles is close to impossible, such as very rugged mountains and dense jungles.

To measure the interaction of terrain and strategy we use the product of the scaled

⁷ Dupuy generated the scores by regressing a series of dummy variables for the various types of terrain on codings of vehicle and manpower mobility in several hundred battles. Because Dupuy coded the case of tactical movement in different types of terrain based on a different data set of *battles*, it is not circular to use the variables as a predictor of the outcomes of *wars*. For detailed discussions about data codings on a battle by battle basis see Dupuy (1983). In cases where there were more than two actors on one side, and so the terrain on which different states fought might have been quite different, we used the following rule. The coded value was an average of terrain scores weighted by the size of the forces fighting in particular terrain.

strategy index and the terrain index, which reduces multicollinearity (as revealed by partial correlations) by creating a single variable with a larger range of values rather than several variables with more limited ranges of values. The scaled strategy variable is coded 1 through 5, a ranking of the observed strategies listed above.⁸

(8) As N increases, the chance of hiding goes up.

Remaining on the battlefield but staying back from actual combat is an option taken by quite a number of troops during war. During the American Civil War, for example, there quite a number of skulkers, sneaks, beats, stragglers, and coffee-coolers, as they were called, on both sides. Both armies endeavored to increase their efficiency at catching soldiers who shirked from battle (McPherson, 1997). During the Soviet campaign during World War II, German troops faced tremendously hard conditions. The German high command wanted to increase the soldiers' motivations to fight rather than hide by cracking down with harsh discipline. More than 10,000 German soldiers were executed on the Eastern Front alone during World War II for disciplinary reasons. By comparison, the British executed a few hundred during the entire war (Bartov, 1991). Draconian discipline during the Iran-Iraq war also served to increase the proportions of both armies willing to fight (Hickman, 1982; Bani-Sadr, 1989). We assume that repressive societies are more likely to generate repressive militaries. Therefore:

Hypothesis 6: Soldiers fighting for repressive societies are less likely to hide, either fighting or surrendering.

Soldiers fighting for highly repressive states are caught in highly risky situations. If they hide, they are likely to be killed, so they must either fight or surrender. Ceterus parabus, we should see states that practice draconian discipline to have high rates of fighting but also high surrender rates. We measure repression (our proxy for draconian discipline) using the repression (PARCOMP) scores from the Polity III data set (Jaggers and Gurr, 1995). We distinguish between repression and democracy, a potentially

⁸ Including the scale or individually multiplied dummy variables makes little difference in the overall results of the model, as the model fit remains nearly identical.

important difference. Significantly, Stam (1996) found that both democratic states *and* states that repress their citizens are more likely to win the wars they fight, and democracies are more likely to win the wars they fight, findings which are consistent with hypotheses 2 and 6.

Additional control Variables

In addition to the variables we need to test the hypotheses above, we include two additional control variables. The first is the size of the state's military. States with large numbers of soldiers on the battlefield at any time will suffer relative more captured soldiers in the loss of a particular battle that armies that are smaller. A battlefield loss for an army with 1,000,000 men in the field will likely lead to larger numbers of POWs than an army with 10,000 soldiers on the field (independent of the length of the battle or war). Larger armies fight with larger units to be surrendered at a single time.

The second control variable is one required for the event count analysis as outlined below. We also control for the relative exposure over time which is an interaction of the number of soldiers and the duration of the war generating the number of soldier-days for the war. This variable is logged according following the procedures outlined below. The data for these two variables come from the correlates of war data set (Singer and Small, 1982).

Data Set

Our population of cases for analysis includes all participants in interstate wars begun between 1816 and 1982. To identify these wars we use the COW set of interstate wars (Small and Singer, 1982) and Dupuy and Dupuy (1986). We code surrender and POW data from Clodfelter (1993). There is some missing data on POWs, nonetheless we have sufficient data to code for 161 cases across 62 wars.

Unlike the COW data set, we disaggregate World Wars I and II and the Vietnam War into multiple wars. World War II we divide into several campaigns listed in the appendix. The Vietnam War we divide into a US/South Vietnam versus North Vietnam phase lasting until 1972, and a second phase of North versus South Vietnam.

This separation makes our data set more historically accurate; these long coalition wars can be thought of as aggregations of distinct conflicts. Decision-makers rarely anticipate or think in terms of large systems of wars, but instead usually think in terms of sequences of opponents. In the case of World War II, Dupuy and Dupuy (1986), among many others, identified separate and distinct negotiated settlements between the various participants, or identified fundamentally independent war-fighting efforts between the participants. Such disaggregation also affords two important advantages for testing the hypotheses. First, it permits more accurate distinctions between winners and losers. In long coalition wars, there are distinct campaigns in which individual members of the losing coalition defeat members of the coalition that is ultimately victorious. For example, our method permits us to classify Russia and Belgium as losers in World War I and Poland and Norway as losers in World War II, whereas the COW data set views these four countries as winners. Conversely, our method recognizes the execution of successful military campaigns by countries that went on to lose, such as Germany's campaign against the Netherlands in World War II. Second, the disaggregation of cases allows us to more accurately code the independent variables. Dividing long wars of global reach into distinct campaigns greatly improves the accuracy of codings for variables like strategy and terrain. Such advantages may not be trivial: one scholar found that how one treats cases from the World Wars determines whether or not one finds significant correlations between military buildups and the outbreak of war (Diehl, 1983).

Empirical Results.

First we present a set of regression results, then we present a table of predicted values to investigate the marginal effects of the variables in question. To estimate the number of soldiers captured, standard regression models based on ordinary least squares (OLS) would be inappropriate. Here we estimate a poisson model, the appropriate estimator for count models (King, 1989; Pollins, 1996). Poisson, or count models, have been used extensively to study various rates or counts of injury, death and disease. Poisson models have at their core several basic assumptions. In the context of this paper, there is a POW rate, or rate at which soldiers choose to quit or allow themselves to be captured. This rate is measured in soldiers per soldier-days. The number of actual POWs observed is the

product of the POW rate and the number of observed soldier-days, or exposure. We also assume that for very small exposures (small numbers of soldier-days) the probability of observing more than one POW is small compared to the exposure (essentially we assume soldiers cannot be captured more than once). Because we expect that the numbers of POWs that one state suffers in a war to be correlated with the number of POWs that their opponent suffers, we must use a poisson model which allows us to take into account correlation within groups or clusters (in our case, wars). The model we estimate is a specialized version based on the general estimating equation for Panel Data which allows us to relax the standard assumption that all the observations are uncorrelated (Liang and Zeger, 1986). We lay out the general poisson a bit more formally below.

We can fit a regression model to the Poisson distribution where we assume that the incidence rate (POW rate) is defined as follows:

$$r_j = e^{\beta_0 + \beta_1 x_1, j + \dots + \beta_k x_{k,j}}$$

The count, or number of POWs observed, is then modeled as the product of the rate and the exposure:

$$C_j = E_j e^{\beta_0 + \beta_1 x_1, j + \dots + \beta_k x_{k,j}}$$

This can be rewritten as the following equation that is the general model we estimate.

$$C_j = e^{\ln(E_j) + \beta_0 + \beta_1 x_1, j + \ldots + \beta_k x_{k,j}}$$

In our case, we have an additional complication, that within a war, the number of POWs one state suffers is likely to be correlated with the number of POWs that other participants suffer. This problem is similar to the correlations that exist within a panel of voters that might share similar attitudes. To control for within group correlations we estimated a random effects model (for an extensive discussion of these types of models see Liang and Zeger, 1986). Standard errors were estimated using the Huber estimation method rather than the traditional standard errors (for a discussion of various approaches to handling heteroskedastic standard errors see Beck and Katz, 1997.) The exposure

control variable was generated as Military personnel-days, which we logged and included into the poisson regression equation.

Using the poisson regression model, we present the parameter estimates in Table 2.

Table 2. Poisson Regression Results: Regressing POW's on several independent variables							
	Coefficient	IRR	SE	Ζ.	P > z		
Democratic Opp.	0.61	1.84	0.27	2.27	0.023		
Political Repression	-0.37	0.69	0.08	-4.328	0.000		
Win, Draw or Lose	-0.79	0.45	0.22	-3.608	0.000		
Military Personnel	0.00	1.00	0.00	4.085	0.000		
Strategy*Terrain	-1.20	0.30	0.21	-5.69	0.000		
Ln(Exposure)	0.37	1.45	0.11	3.51	0.000		
Constant	10.65		1.09	9.764	0.000		

IRR column presents Incidence Rate Ratios

Parameter estimates generated using General Estimating Equation (GEE) for panel data. N = 161. Group variable: warnum. Number of groups = 62 Observations per group, min = 2, avg. = 2.60, max = 8 Chi² (6) = 315, Prob. > Chi² = 0.000, Deviance = 17060592, Dispersion = 110783

Looking at the results in Table 2 demonstrates statistical support for our hypotheses above.⁹ All the variables meet standard levels of statistical significance using

⁹ It is possible that our model suffers from over-dispersion, a case where the variance in the data is greater than that expected from a Poisson distribution. Typically when estimated a model using data that suffers form over-dispersion one would fir a negative binomial distribution rather than a poisson distribution. There are two possibilities, one is that, indeed the data are not generated by a Poisson process, the other is that the set of independent variables is underspecified. If the case is the former, then the estimates presented above should be taken with a substantial grain of salt. If the problem is the later then the question of bias would be one of omitted variable bias which would only be a concern if the omitted variables were correlated significantly with the variables of particular interests, such as the opponent's level of democracy. To check for these problems we estimated a negative binomial model (King, 1988) and generated similar estimated for the parameters. Unfortunately, there is no readily available estimator for Huber robust standard errors for the negative binomial model so the standard errors from the Negbin model (which do not meet standard levels of significance) are somewhat suspect. In addition, typical Negbin estimators do not allow one to control for clustering on the dependent variable a powerful source of bias in our data set. Finally we checked the results using a Logged

the somewhat conservative Huber standard errors. While interpreting the marginal effects of non-linear models is difficult, in this case, positive coefficients will be associated with larger numbers of POWs, negative coefficients associated with smaller numbers. States that fight against democratic opponents can expect to suffer larger number of POWs than states that do not. Also as hypothesized, states that are forced to practice draconian discipline in order to maintain battlefield discipline (operationalized here as "political repression") can expect to suffer larger numbers of POWs as well. Losers as we anticipated, suffer still more POWs. States that are able to match properly their strategies with terrain will suffer fewer POWs. Larger armies with their associated large troop concentrations also present potentially more vulnerable targets insofar as they tend to have more soldiers captured than states with smaller armies. Aside from these general conclusions, what can we say about the substantive effects of the variables in question?

In order to judge the substantive effects of the various independent variables, in Table 3 we present hypothetical predictions of the numbers of POWs we would expect. In this table we generated predicted values or counts of POWs setting the independent variables all at their observed values with the exception of the independent variable in question. This we set at various hypothetical values. We then calculate a predicted number of POWs for each case in the data set, we then present the mean and the median across the entire data set.¹⁰

Ordinary Least Squares (LOLS) model where we were about to control for both panel effects and generate robust standard errors and found results quite similar to those presented above (Dixon, et al, 1993).

¹⁰ Typically, only the mean value is presented but the data here are quite skewed so the median presents a more accurate picture of a typical case. The skew between the median and the mean demonstrates the tremendous range in the number of POWs we observe across wars, but also that most wars are quite small and as a result have comparatively few POWs.

	Mean Number of POWs	Median Number of POWs
IV: Opponent Democracy		
Not Democrat	112,166	11,346
Democrat	199,651	20,868
IV: State's Repression level		
0	52,281	4,284
1	75,631	6,178
2	109,410	8,910
3	158,275	12,850
4	228,964	18,533
5	331,224	26,728
IV: Win, Draw or Lose		
Lose	319,713	22,088
Draw	145,018	10,019
Win	65,778	4,544

Table 3: Predicted number of POWs (based on data means and medians) for marginal effects, using coefficients from Table 2

In Table 3 we investigate the effects of allowing three of our independent variables to change over their respective ranges while holding the other variables constant at each case's observed value. We then predict what the number of POWs would be for each case. We then calculate the average and median number of POWs for the entire data set. The first variable we look at is the opponent's democracy level. Facing a democracy nearly doubles the number of POWs a state can expect to incur. Whether we look at the mean or the median the effect is quite pronounced. Democracies do appear to be something of an attractive nuisance on the battlefield, something that autocratic leaders must take into account when engaging in and prosecuting wars with democracies. This finding provides anecdotal insight explaining why Hussein refused to allow his conscript army to take evasive action at night during the air portion of the gulf war. Hussein likely felt that allowing his troops the opportunity to evade the American B-52's by moving at night from place to place would also offer them the opportunity to surrender. From his

perspective, it was likely better to have them suffer in the sand then increasing the already high risk of having them surrender en masse.

The effects of political repression or draconian discipline are also pronounced. Autocratic states face the problem of forcing their troops to fight hard. Democracies do not suffer this difficulty to the same degree, soldiers from democratic states being loath to be captured by an opposing autocratic state who is unlikely to honor the Hague convention. In order to prevent troops from hiding versus fighting, Autocrats must fall back to harsh discipline. For example, as noted earlier, the Germans executed over 10,000 of their own troops during World War II while the British executed less than 20. But while the harsh discipline increases the likelihood that an individual soldier will fight it also increases the chances that they will surrender if given the opportunity and facing an opponent that will, in fact, capture them rather than simply executing them on the spot. States at the high end of the repression scale suffer nearly six times as many POWs as states that do not execute any significant numbers of their own troops. While this may appear to be a significant disadvantage, and hence irrational, recall that this same discipline results in the soldiers that do not become POWs being more likely to fight versus hiding. Evidence in support of this proposition can be found in these states' higher probability of victory in war as demonstrated in Stam's Win, Lose or Draw (Stam, 1996).

Finally, soldiers are apparently significantly less willing to risk their lives in losing causes. As hypothesized above, as the outcome of a war becomes known, soldiers on the losing side apparently are far less likely to risk their lives in a losing cause. Consequently, we believe, loser will suffer far larger numbers of POWs. In fact, losers suffer more then five times the number of POWs than winners do.

Uncertainty and Propaganda

While we present quantitative evidence that is consistent with the POW game, this approach to surrender and desertion is quite novel. Its also begs the question of how well do the soldiers know the game we argue that they are playing? In other words, is the game common knowledge or are soldiers uncertain about the factors that we argue alter individual soldiers' decision calculus to fight or quit. This is the point at which we

believe our model and standard explanations of the battlefield merge and are quite comparable. States are quite aware of the dilemmas we present above. In order to minimize their own soldiers' willingness to quit and to maximize their opponent's, states turn to the tool of propaganda as a means to manipulate the beliefs of solders on both sides of the battlefield. Within the framework of this model, a soldier's level of uncertainty regarding the above factors can be directly translated into a probability that his belief represents reality. A soldier often relies upon information published in newspapers and broadcast over the radio, but due to war-time tendencies to promote propaganda, this information is almost always less than perfectly accurate. This information, however, leads a soldier to develop opinions about the variables described in the surrender model regarding his and the opposing country's policies.

In addition to drawing from the mass media, soldiers often have access to reports and data obtained by army agencies and departments. For the most part, an army is uncertain as to precisely what the opposing soldiers believe. During wartime, armies attempt to change both the enemy soldiers' perceptions and the beliefs of their own soldiers by manipulating their expected values and beliefs to convince them to surrender or to remain loyal. Often armies manipulate their opponent's soldiers' expected values for the various choices by leafleting the opponent's armies with promises of humane treatment for POWs and attractive promises of asylum or expatriation.

"Propaganda, it is felt, forces us to think and do things in ways we might not otherwise have done had we been left to our own devices" (Taylor, 1995). Propaganda, therefore, becomes the enemy of independent thought and an intrusive force in the midst of warfare. The psychological warfare may result in newly shaped perceptions or beliefs that guide the actions of soldiers during battle. Understanding the power that propaganda policies harbor during wartime helps to explain the differences in the decision-making processes of soldiers who are targeted by varying propaganda styles. The potential power of propaganda lies in shaping the beliefs of soldiers, which in turn contributes significantly to the execution and outcome of war by affecting surrender dynamics.

Persuasion has been used since ancient times as a means of persuading soldiers that their army is invincible, in one sense raising their estimates of L and W. Mesopotamia, Assyria, Athens, Sparta, Rome, and other ancient civilizations all relied on propaganda to improve the fighting spirit of their soldiers (Taylor, 1995). Julius Caesar, for example, both punished deserters and offered clemency to former enemies recognizing the importance of having his own soldiers feel assured of punishment if they defect, and of guaranteeing protection to deserting enemies. Later, during the Crusades, Pope Urban II would emphasize atrocities committed by the Saracens against Christians:

"[The barbarians h]ave circumcised the Christians, either spreading the blood from the circumcisions on the altars of pouring it into the baptismal fonts. And they cut open the navels of those whom they choose to torment with a loathsome death, tear out most of their vital organs and tie them to a stake, drag them around and flog them before killing them as they lie prone on the ground with all their entrails out" (Taylor, 1985: 73).

The twentieth century has seen extensive use of propaganda to influence soldiers' beliefs about their treatment if captured, the likelihood their side will win, and their chances of survival. For instance, during World War I, the Americans boasted of their strength. Little leaflets with a row of soldiers, whose size would vary with the monthly increase in the number of American soldiers, were distributed on the German front. A similar card stated:

"Do not worry about me. The war is over for me. I have good food. The American Army gives its prisoners the same food as its own soldiers: Beef, white bread, potatoes, beans, prunes, coffee, butter, tobacco, etc." (Lasswell, 1971: 167).

In order to prevent surrenders, states also manipulate the beliefs of their own soldiers about how they will be treated by the enemy if captured. During World War II, the personification of Japanese as monkeys and beasts was a widely utilized ploy by the Allies. Pictures, leaflets, and articles describing shocking incidents which were singled out for special publicity in the Allied camp contributed greatly to the "effectiveness of propaganda depicting the Japanese collectively as an inherently savage race" (Dower, 1986: 42). The American army did not have to exaggerate much to convince GIs that the

Japanese did not treat their POWs humanely; incidents such as the Bataan death march were all too persuasive. On the opposing side, the Japanese military invested substantial resources towards convincing its soldiers and sailors that the Americans themselves were beasts, and that only torture and death awaited them if they were captured. This campaign was all too effective. Its apex came during the American invasion of the island of Iwo Jima in the spring of 1945. There the Japanese resisted and died almost to the last man: only a few hundred were taken prisoner against 20,000 dead (Dower, 1986). Japan during World War II demonstrates the potential power of propaganda, as Japanese troops became completely convinced that although their opponent was a democracy a cruel fate would befall the Japanese soldier if captured. Throughout the war, the Americans were unable to shake this belief on the part of the Japanese soldier.

Describing the Allied attitude toward propaganda it is interesting to note the dramatic difference in philosophy compared with that of the Germans. Perhaps the most notable propaganda effort stems from Joseph Goebbel's propaganda effort during World War II. Robert Herzstein plumbs the depths of Nazi Propaganda campaign in his book The War that Hitler Won by exploring the unique propaganda techniques assumed by the Nazis in comparison with those employed by the Allies. Joseph Goebbels, the German Minister of Propaganda, worked at the creation of what he later called Hitler mythos. He appealed to idealism and heroism, focusing on the ideology of total war. The Nazis utilized one of the most effective campaigns in strengthening and propagating Nazi wartime ideology within party circles. The Radio and the Press became the instruments in shaping soldier mentality. Widely circulated leaflets and subscriptions were distributed to soldiers, shaping the soldier's beliefs about life in postwar Germany and about treatment of prisoners by the allies. The wartime German press offered little to the reader in the way of editorial variety, but it presented newspapers differing in style and format that provided an entertainment value to the propaganda. The Voelkischer Beobachter and Der Angriff, for instance, contained traces that supported the Nazi belief that "the press is only a tool. The NS newspaper is supposed to be a means of propaganda, not exclusively an organ of information; it has to serve the movement and without it loses its justification" (Herzstein, 170, 1978).

Perhaps most notably, argues Herzstein, was the Nazi's vast use of books and pamphlets, brochures and leaflets, window displays and slide shows, posters and placards, postage stamps and cancellation marks, and programs and films in the "education" of soldiers. By 1941, party and private publishers produced almost a quarter of a billion copies of wartime books and pamphlets. Almost 40 percent dealt directly with the issues of war. Many of the pamphlets, serving as the basic strategy to the "Hitler mythos," depicted a caring, enthusiastic Hitler visiting and interacting with soldiers. Advertisements like the one titled With Hitler in Poland showed Hitler with troops in their living facilities. Others depicted Hitler promoting nationalism, encouraging support, and demonstrating concern for the well being of the German soldiers. Newspapers were allegedly corrupted, correspondents bribed, and publishers subsidized (Laurie, 1996). In addition to the efforts to shape their own soldiers beliefs, the Nazi propaganda machine also aimed at the allies' soldiers as well. Much of the Nazi propaganda effort was expended undermining the morale of Axis allies and enemy forces. The OSS, Nazi Morale Operations Branch, air-dropped kits containing leaflets, pamphlets, stickers, rubber stamps, and posters. Teams of agents organized distribution networks and gathered intelligence behind enemy lines (Laurie, 1996). One example involves the British goal of uncovering the low level of German morale and the strong partisan activity in enemy-occupied Crete. Enemy morale on the island was so low, mainly due to propaganda campaigns, that only "3,000 to 15,000 troops there were likely to resist an Allied attack" (Laurie, 196, 1996). Similarly, the most successful MO (Morale Operations) Twelfth Army Group campaign, the Scorpion West, outlines the importance of propaganda in influencing soldier morale. The Scorpion West unit distributed leaflets that: 1. claimed that Nazi leaders doubted Wehrmacht resolve to hold against Allied attacks 2. encouraged enemy soldiers to eliminate defeatist officers who attempted to surrender or retreat, and 3. ordered troops to aid civilian evacuation of every village. The leaflets sought to encourage troops with morale-boosting descriptions of secret weapons, additional manpower, and Nazi Germany's adoption of total war. For a while, the Scorpion West elevated soldiers' morale to unprecedented levels, until American interference.

During the Vietnam War, the American forces used propaganda in an attempt to encourage the surrender of Viet Cong and North Vietnamese forces. The Americans often dropped leaflets promising safe passage and treatment to the holder of the leaflet. Figure 2 is a typical leaflet¹¹:



Figure 2. A Propaganda leaflet from the Vietnam War

The effectiveness of the leaflets was limited by intense Vietnamese nationalism and (largely true) rumors of prisoners being tortured by their South Vietnamese captors.

Propaganda also played an important role during the 1991 Gulf War. President George Bush had issued three secret directives---- incorporating organized Kuwaiti resistance groups inside the occupied country with a combined use of "black" radio stations and leaflet propaganda. Thousands of transistor radios had been smuggles into Kuwait and southern Iraq with the help of nomads so that the enemy troops could listen to coalition broadcasts. In the Gulf War, "black" propaganda gave the appearance of coming from disaffected groups inside Iraq and Kuwait, when they were in fact coming from coalition-controlled areas. The propaganda aims pointed to Saddam Hussein as the "Great Satan," responsible for massive, painful deaths. The Voice of Free Iraq, also started in the United States broadcast propaganda pieces as this one:

"After all this destruction you are seeing around you, you Iraqi brother, you must be wondering what did we gain, what did we reap in the Saddam Hussein era? ... And

¹¹ See Bob Poss's account of his experiences of the Vietnam War which can be found at the Internet address, *http://www.csnsys.com/vietvet/Friendly.htm*

was it good for Iraq? Who is going to rebuild Iraq that was rich with its resources ... As soon as he finishes a war, he takes us to another war?" (Taylor, 1992: 151-52)

Reports suggested that, by the start of February 5 million leaflets had been dropped about how to surrender. By the end of the war, something on the order of 30 million leaflets would be dropped over Iraqi lines, an astonishing figure which meant nearly two for every member of the Iraqi population and about 50-60 for every enemy soldier. Perhaps the key to the effectiveness of coalition propaganda was the credibility that ensued from the coalition's ability to do what it said. As the war shifted heavily in favor of the coalition, American propaganda devices became much more effective in drawing and keeping the attention of Iraqi troops.

Propaganda plays a critical role in the formulation of the POW Game. Naturally, further analysis of other wars, and detailed incidents of the wars thus far briefly described in this paper will aid in a more thorough understanding of the POW Game. Most importantly, one should note that psychological warfare constitutes a significant factor influencing war execution and outcomes, owing to the contributions of the soldiers.

Conclusions

In this paper, we presented a simple model of the decision to surrender on the battlefield. From the model, we derived several hypotheses regarding the relationship between the political structure of the warring side's and the relative likelihood that soldiers would allow themselves to be captured. We found support for the hypothesis that democracy serves as an attractive nuisance on the battlefield, drawing large numbers of opposing soldiers off the battlefield. We also found that states that rely on draconian discipline and repression of dissent do so at a cost – in terms of the greater number of POWs they suffer. We also found that losers tend to suffer far larger numbers of POWs than winners. These results differ substantially from standard explanation of why soldiers surrender, notably because they suffer form some psychological pathology or that they are making a political statement.

These empirical findings lead us to several conclusions about the nature of research on war and on the state of the international relations discipline. Regarding the

former, future research should analyze links between number of desertions/surrender and war or battle outcomes. While the selection effects literature is becoming more sensitive to anticipated outcomes, much of what political scientists take for granted about the nature of war outcomes needs to be updated. For example, standard outcome models typically ignore political structure of the states involved and all avoid the notion of surrender and desertion.

Additionally, this paper is a building block towards the larger question of why democracies win wars. Previous research implies that democracies only start winnable wars, that soldiers fight harder for democratic states, and that democracies are more likely to engage in less costly wars. Nevertheless, there is also some evidence that the selection effects explanation is not sufficient to account for the various empirical observations about democratic war participation. The POW game provides a bit of evidence that is consistent with several of the various propositions regarding democratic war participation.

Finally, the paper shows the importance of political structure on all levels of warfare and demonstrates the importance of thinking about all individuals as making choices, as opposed to individuals as cogs. The power of political liberalism lies in its realization of the influence that individual choice has on macro outcomes. While voters and consumers and their respective rolls in economic and domestic politics are widely studies, the results presented here indicate that those that study international relation should perhaps revisit the almost myopic focus on second and third image explanations of international events. If we look at war, politics and economics as something of a triad, then we see that voters at the base of the politics leg, consumers at the base of the economics leg and finally, soldiers at the base of the war or international conflict and relations leg are all critical actors in the events under study. If we ignore the role of any one leg or its respective empirical base, we run the risk of reaching biased inferences and deduction about the nature of the world around us.

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